INDUCTION LEVEL TRAINING FOR DIET FACULTY

TRAINING PACKAGES FOR
IN-SERVICE PROGRAMMES,
FIELD INTERACTION AND,
INNOVATION COORDINATION
(IFIC) BRANCH   .

REGIONAL COLLEGE OF EDUCATION
BHUBANESWAR-751 007
(National Council of Educational .
Research and Training)
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In order to realise the goals of UEE and Adult Education, District Institutes of Education of Training (DIET) has been designed for ensuring qualitative improvement of elementary education in our country keeping in tune with the National Policy on Education. Consequently, DIETs have been set up in eastern states of Assam, Orissa, Arunachal Pradesh, Mizoram, Nagaland and Manipur under centrally sponsored scheme along with other states of the country. In these newly established DIETs though efforts have been made to enhance infrastructural facilities, the transactional competency of the faculty is to be improved substantially in the years ahead. 15 days' Induction Level Training Programme designed by RCE, Bhubaneswar in collaboration with DTESEES, NCERT, New Delhi is an attempt to realise the goals and mission of DIETs in general and the training need in the area of Inservice Education , Field Interaction, Innovation and Coordination of the teachers in particular. While preparing the modules and formulating the Induction Level programme design necessary feedback were obtained from DIET document of MHRD, (Department of Education) Govt. of India, materials/modules/guidelines developed by NCERT,NIEPA and Regional College of Education, Mysore. While delineating the task analysis of the participant faculty belonging to the In-service, Field Interactio

Innovation and Coordination Branch of DIET, the training
needs of diverse target groups involved in implementation
of UEE has been taken into consideration.

I appreciate the sincere efforts of my faculty
members in RCE, Bhubaneswar for designing modules for .
the Induction Level Training of IFIC Branch DIET faculty.
The tempo of such preparation was kept at the optimum
by the Coordinator of the Extension Services Department,
Dr.D.K.Bhattacharya and his staff throughout the training.

I further recognise the efforts of
Prof. S.T.V.G.Acharyulu the Programme Director,
Dr.D.K.Bhattacharya, Reader in Education, the Programme
Coordinator in designing the outline of programme
document within a short time.

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Prof.K.C. Panda   25·2·91
Principal
Regional College of Education,
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CONTENTS

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DIET - ITS STRUCTURE AND FUNCTIONS
IFIC BRANCH - ITS FUNCTIONS
GUIDELINE FOR IFIC

Prof. K.C. Panda

Conceptualisation of District Institute of Education and Training (DIET) is an important change in the educational system. This will bring radical transformation in the present system of Elementary Teacher Education i.e., preservice and inservice teacher education for the formal Elementary schools, Continuing education, Action research, Resource development etc. Once the DIETs are established, substandard institutions will be abolished. More specifically and particularly the DIETs will perform training, resource development, and action research functions, headed by a principal and with supporting academic and non-academic staff.

DIET : Its Structure and Functions

The two missionary role entrusted to DIET, with the background of NPE, 1986, POA, and National Literacy Mission are to (a) provide academic and resource support at the grassroot level for the success of various strategies for achieving excellence in UEE and Adult Education within the framework of a District.

And secondly (b) keep the child-centred approach while formulating teacher training programmes and ensure minimal learning outcomes or competencies.

Hence, in a continuum of relevance and programme planning, DIET has to play a pivotal role in bringing excellence to UEE/AE/NFE in the District level while at the sametime keeping a close link with State and Central level

organisations in the field of operation. DIET is a part of larger design to achieve the national goals and priorities in education.

The transactional philosophy that would govern the functions of the DIET are : use of learner centred approach, organisation of need based programme, use of innovative approaches to teacher preparation, teaching and learning and acting as a single viable resource centre in the District in the years to come emphasising the educational development of special target groups viz., girls and women, SC/ST, minorities handicapped, educationally backward etc., with its accountability linked to District Boards of Education (DBE), and wherever it is not existing or visualised, the SCERTs and SRCs will discharge this function of monitoring and evaluating DIET.

Structure and Functions of Units-

Each DIET will have seven Branches or Units.

The DIET will discharge several functions through its own branches but the overall picture would relate to essentially

a) Elementary school teachers.

b) Headmasters, Heads of School Complexes Administrators.

c) Instructors and Supervisors of NFE/AE.

d) Members of DBE, Community members etc.

e) Resource persons in charge of training.

Since a large and dispropationate number of our primary school teachers are outside the circumference of exposure to new curricula content and pedagogical foundations, DIET would strengthen the teacher competencies through Direct and Distance modes.

DIET Head - Principal

	Pre-service Teacher Education Branch (PSTE)	Work Experience (WE)	District Resource Unit (DRU)
	1	2	3
I. **Organised** **Structure** **A.** **Academic**	1 Sr. Lecturer 8 Lecturers (Special in Language, Social Science, Mathematics & Foundations Art, PE). 1 Lab. Asst.	1 Sr. Lecturer 1 Lecturer 1 W.E.T.	1 Sr. Lecturer/ Vice Principal 2 NFE Lecturer 1 Lecturer A.E.
B. **Administration**	The Administrative staff, consultants resource persons, and physical facilities will be as per guide lines.		

	Inservice Programme, Field Interaction and Innovation Co-ordination (IFIC)	Curriculum, Material Development and Evaluation (CMDE)	Educational Technology (ET)	Planning and Management (P&M)
	4	5	6	7
I. **Organised** **Structure** **A.** **Academic**	1 Sr.Lecturer 1 Lecturer	1 Sr.Lecturer 1 Lecturer	1 Sr.Lecturer 1 Lecturer 1 Technician	1 Sr.Lect. 1 Lecturer 1 Statistician
B. **Administration**	Same as B above			

II. Functions (In Respect of Each Branch of DIET)

1. Pre-service Teacher Education Branch(PSTE)

1) Organisation of Pre-service Teacher Education for Elementary Teachers.

2) Promotion of child centred education and preparation of Aids, Action Research.

3) Multigrade/Peergroup teaching for NFE/AE.

4) Providing Guidance service in schools/ NFE/AE Centres.

5) Learning and Remedial Instruction for first generation learners.

6) Education of Mild and Major disability children.

7) Provide inputs to other Branches of DIET.

8) Maintenance of Lab., Resource room, supporting curricular activities in areas specified in school curriculum.

2. Work Experience (WE)

1) Identification of WE areas and development of teaching-learning material.

2) Help school/NEE/AE authorities to introduce W/E.

3) Conduct inservice programmes to help staff in WE.

4) Provide WE input in all programme of DIET.

5) Maintenance of the DIET.

6) Organisation of community service activities.

7) Maintain workshop and work related hobbies.

District Resource Unit (DRU)

1) Coordinate Training Programme for NFE/AE.

2) Nodal Branch for Induction training of NFE/AE staff and resource persons and other functionaries.

3) Instructional inputs in all areas of content and pedagogy for the above programme.

4) Evaluate and monitor programme of NFE/AE and suggest improvement.

5) Maintain a data base of personnel and facilities.

6) Adaptation of cocurricular and renewal when required.

7) Field interaction with NFE/AE.

4. Inservice programme, Field interaction and Innovation Co-ordination (IFIC)

1) Planning and Coordination of Inservice Education.

2) Identify teachers for Training, prepare Annual Calender of Training in and outside DIET.

3) Nodal Branch for organising inservice programme for all categories of staff in Elementary Education. Resource Programme using distance, distance-cum-teaching mode.

4) Evaluate/monitor the quality and efficacy of work programme in and outside DIET.

5) Maintain data base of all persons except of NFE/AE. Who undergo training in DIET.

6) Serve as a reference/ resource centre.

7) Nodal branch for all Action research.

8) Dissemination of information and coordination of activities.

9) Publication of periodical/
journals for use element-
ary school teachers and
other staff.

Curriculum, Material
Development and
Evaluation (CMDE)

6. Educational Technology
(ET)

1) Development of Curri-
cular for Elementary
education and Elementary
teacher education.

1) Development of simple
low cost teaching aids
for various subjects
relating to elementary
education and elementary
teacher education. The
same attempts shall be
made for NFE/AE.

2) Develop tests for
evaluation, diagnostic
and remedial teaching
guidelines for teachers.

2) Maintenance of the
Audiovisual Equipments
including a library of
such materials and films
with lending and
borrowing facilities.

3) Assist DRU for the same
exercise given in no. 2
for NFE/AE.

3) Keep liasion with TV,
AIR for broadcast on
relevant topics in the
areas of Elementary
education/Elementary
Teacher Education, NFE/
AE.

4) Assessment to be under-
taken in samples for
Minimal learning
competencies.

4) Conduct appropriate
tests of evaluation
of such TV/AIR
programme.

5) Organise workshop for material development as per curriculum.

5) Conduct workshops.

6) Suggest inputs to other pre-and inservice programmes.

6) Provide AV inputs to other programme of DIET.

. <u>Planning and Management (P&M)</u>

1) Preparation of Data base for educational planning within the District and monitoring facilities in UEE/UPE/NLM.

2) Conduct policy oriented research in the areas of enrolment, retention, attendance, interventions, community perception, and participation development of norms on Elementary school children, NFE/AE.

3) Provide Assistance to educational authorities in school mapping, microplanning for UPE/UEE in area specific group, institutional planning, and evaluation.

4) Serve as nodal branch in
community involvement
programmes and organise
orientation programmes for
members of DBE. HMs, Heads
of School Complex, Block
level Officers.

5) Assess efficacy of various
programmes implemented in
the framework of objectives
of UPE/UEE/NLM.

6) To prepare consolidated
reports on the functions
of DIET and supply inputs
to other programmes and
branches of DIET.

7) To conduct Action Research
on Field interaction
activities.

The functions of the IFIC branch alongwith others have
been summarised above and the guide lines for IFIC branch
for operating and implementing the programme can be viewed
interms of Action plan.

The IFIC has, through inservice teacher education
programme must inculcate knowledge skills and attitude
required under the need curriculum being implemented in
Elementary schools.

a) Training of the teachers by contact atleast
for 2 weeks over a five year period.

b) Regular professional meetings during the
session at the school complex.

c) Professional support through print and
audiovisual media.

d) Every primary teacher has to be covered under
the contact mode in or outside the DIET.

e) The inservice programme may be scheduled for
Headmaster and Head of School Complexes.

f) The programmes are to be theme specific.

g) Refreshers training programmes for AE/NFE
personnel.

h) Orientation programmes for members of DBE and
VECs, Community leaders, etc.

The operational framework would also be sent to DEO
and management of non Govt. Schools who will sponser teachers
to the programme. The programme has to be planned with a
course director drawn from IFIC, with basic outlines of the
course. Particepant evaluation, and programme and faculty
evaluation of training programmes be organised using both
contact and distance mode.

In the Field interaction sector, identification of
practical problems and ways to tackle such problems in the
field, innovation, success experiences, providing academic
guidance, advising and giving resource support through
extension works dissemination of materials, encouraging
school complexes, teachers, NFE/AE personnel, identifying
workers of high calibre and committment, to discharge the
functions.

Action research on enrolment, retention, learning, remedial teaching for SC/ST, disabled, disadvantaged, girls, women, minority community, first generation learners, trying out specific activities may be undertaken by the branch duly approved by PAC of the institute.

There are several other activities of the DIET with respect to each branch. However, the success of the scheme would depend upon the coordinated effort of all the branches and units under DIET and because it is a new thrust, proper deliborations and consensus and expertise be considered before floating any programme.

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b/s

INDUCTION TRAINING PROGRAMME FOR IFIC FACULTY OF THE DIETs IN THE EASTERN REGION - AN OVERVIEW

Dr. S.T.V.G. Acharyulu

The National Policy on Education and the accompanying Programme of Action (1986) for its implementation have given the necessary impetus to the goal of Universalisation of Elementary Education (UEE). One of the important goals of elementary education is to ensure that all children attain certain minimum levels of learning at the primary and upper primary stages of education. All these centre around the teacher and his character and competence. This in turn depends upon the quality of teacher training and other resource support. For quite some time such academic and research support is provided at the National Level by NCERT and NIEPA and at the State level by SCERTs. Similarly for adult education necessary support is provided by the Central Directorate of Adult Education and the State Resource Centres (SRCs) at the national and state levels respectively.

Both the systems of elementary education and adult education have expanded so much that the NPE and POA have suggested the decentralisation of academic and resource support. Consequently a district level supporting organisation in the name of 'District Institutes of Education and Training (DIETs)' came into existence. The POA (1986) has highlighted the functions of DIETs and these include the following :

- Organisation of preservice and inservice teacher education for the formal elementary school system.
- Organisation of induction level and continuing education programmes for Instructors and Supervisors of Non-formal and Adult Education Centres.
- Training and orientation of heads of institutions in institutional planning and management and micro level planning.

- Academic and resource support to school complexes.
- Encouraging action research and experimental projects.
- Functioning as an evaluation centre for Primary and Upper Primary schools as well as for adult education and Non-formal education centres.
- Provision of services of a resource and learning centre for teachers and instructors.

The DIETs have to achieve exellence in their own work while helping elementary schools, non-formal and adult education systems in the district to achieve exellence. They have to become models for other educational institutions to emulate.

DIETs and its Academic Branches

The DIET has seven branches. Most activities and programmes of the DIET would be such that they call for the involvement of two or more branches. The branches are :

- Preservice Teacher Education (PSTE)
- Work Experience (WE)
- District Resource Unit (DRU)
- Inservice Programmes, Field Interaction, and Innovation Coordination (IFIC)
- Curriculum, Material Development and Evaluation (CMDE)
- Educational Technology (ET)
- Planning and Management (P&M).

The focus of the present induction training programme is on the faculty of IFIC, which has the responsibility to organise inservice programmes for teachers, headmasters and other target groups within the district and thus contribute to qualitative improvement of elementary education.

The aims and objectives of the induction training programme for the faculty of IFIC branch of the DIETs include the following :

- To enable the IFIC faculty to understand the
  purpose and functions of DIETs in general and
  the IFIC Branch in particular.
- To enable the IFIC faculty to identify the needs
  of teachers working in the elementary schools of
  the district and to chalk out perspective plans
  to meet them through inservice programmes.
- To help IFIC faculty to prepare annual calendar
  of Main Programmes (including theme specific
  programmes) for :
  a) Primary and Upper Primary teachers
  b) Headmasters of Primary and Upper primary schools.

- To enable IFIC faculty to organise inservice
  education programmes for the teachers in the
  contact/distance/distance-cum-contact modes.
- To serve as a nodal point for preparing training
  programmes for :

  a) Heads of Schools Complexes and Block Education
     Officers.
  b) Resource persons who conduct the Main
     Programme at centres other than DIET.
  c) AE/NFE Personnel.
  d) Teachers and Heads of Schools whose content
     does not relate to any specific Branch of DIET.

- To enable the IFIC faculty to evaluate and monitor
  the quality and effectiveness of inservice programmes
  organised for various targets groups..
- To maintain a data base on all teachers, headmasters
  etc., who have attended the inservice programmes and
  to conduct follow up studies.
- To enable the IFIC branch to function as a nodal
  point for coordination of inhouse action research
  and dissemination of results of research and
  innovation in elementary education.

- To expose IFIC faculty to the modules developed by the R.C.E., Bhubaneswar which would help them in organising omnibus inservice programmes (referred to as 'Main Programme' in the DIET Guidelines) of 2 to 3 weeks duration. The modules relate to the following areas :

- Micro planning and monitoring progress towards UEE.
- Inservice Modalities
- Planning of Insergice Programmes
- Extension Programmes
- Evaluation of Inservice Programmes
- Institutional Planning
- Educational Technology (development of low cost improvised teaching aids and effective use of A.V. aids).
- School Complex
- School Community Relations
- Child Centred Approach/Activity based approach to teaching.
- Multiple Class Teaching
- Education of children with motor and other handicaps.
- Minimum Levels of Learning
- Clearing House functions of IFIC for information on results of research, innovation etc., in the area of elementary education.
- Education of first generation Learners
- Education of the gifted
- Using Classroom as a laboratory
- Achievement testing at the elementary level
- Action Research
- Methodology of teaching :
    a) Environmental Studies (Social Science)
    b) Mathematics

c) Language and Mother tongue

d) Environmental Studies (Science)

e) Work Experience

f) Science

g) Art Education.

- Minimum levels of learning in :

a) Languages

b) Environmental Studies (Science)

c) Environmental Studies (Social Science)

d) Mathematics

•e) Work Experience.

- Value and Culture Education
- Diagnostic testing and Remedial teaching.

The above are only suggestive and the needed materials could be developed in other theme specific areas. These modules are not final and could be improved.

As per Fifth All India Educational Survey we have about 87% trained teachers in our elementary schools. Our inservice teacher education programmes have not covered a great majority of these teachers. It is quite possible that many elementary school teachers must have retired without attending any inservice teachers training programme. In view of the changes in curriculum, teaching-learning approaches, evaluation etc., there is a great need for organising continuous inservice education programmes for elementary teachers. Inservice education in its broader sense is as old as teaching itself. Despite shortcomings inservice teacher education has contributed substantially to the upgrading of thousands of sub-standard teachers. These have been providing greater depth and breadth both in content and methodological aspects in areas where elementary school teachers are found to be deficient. Essentially, inservice education should do for teachers in service what preservice training is now doing to new teachers.

We have to view preservice and inservice teacher training as a contiuum. Both preservice and inservice teacher education programmes attempt to develop the knowledge and skills believed to be necessary for effective teaching. They both attempt to make the learning experiences relevant to the learner. They both have the ultimate goal of improving the performance of the teacher. Both have, as one of the highest priorities, the transfer of training into practice in classrooms.

The purpose of inservice education is to keep teachers informed and to probe advances in curriculum instruction, testing, and evaluation. Inservice education of teachers is the major key to the building of a greater professionalism among elementary school teachers. The quality of teachers in our elementary schools is a matter of the deepest social concern. We need teachers whose potentialities have been developed highly, whose knowledge is accurate, extensive and up-to-date, who like and are liked by children, who are willing to improve their own teaching, who know how to guide students learning and who know how to evaluate student progress in terms of objectives.

All inservice elementary teacher education programmes should be based on needs emerging out of research findings. Unfortunately due to meagre research effort in this direction we are guided mostly by expert opinion and feasibility. The enormous number of elementary school teachers who require inservice training and financial constraints create difficulties in meeting even the recommendation of Education Commission (1964-66) that "every teacher would be able to receive atleast two or three months of inservice education in every five years". The National Commission on teachers likewise recommmended that "attendance at an inservice training course be made mandatory for every teacher atleast once in five years". The frequency of inservice teacher training programme for

the target groups depends upon the number of personnel who
are to be given such a training. The question of how many
programmes each target group person has to attend once in
3 or 5 years depends upon the number of teachers and the number
and duration of programmes the DIETs can conduct in and
outside. It was estimated that DIET could conduct 12 to 14
programmes with an intake of 40-45 participants per programme
and covering 500 to 600 elementary school teachers in a year.
The State-wise distribution of primary and upper primary
schools along with the number of teachers is given in table 1.
This data would be helpful in planning the inservice programmes
for elementary school teachers.

Table - 1

State-wise distribution of Primary and Upper
Primary Schools and number of Primary and Upper
Primary School Teachers in the Eastern Region

Sl. No.	State	Primary Schools		Upper Primary Schools		Total Schools	Total Teachers
		No. of Schools	No. of Teachers	No. of Schools	No. of Teachers		
1.	Aruanchal Pradesh	952	2597	182	1029	1134	3626
2.	Assam	25873	62833	4991	30758	30864	93591
3.	Bihar	51377	130850	12211	77404	63588	208254
4.	Manipur	2757	10754	436	4219	3193	14973
5.	Meghalaya	3692	6871	665	3075	4357	9946
6.	Mizoram	1005	3296	463	2656	1468	5952
7.	Nagaland	1131	5622	291	2929	1422	8551
8.	Orissa	34178	85321	8271	28149	42449	113470
9.	Sikkim	468	4048	121	874	589	4922
10.	Tripura	1927	10040	419	3711	2346	13751
11.	West Bengal	48456	167172	3127	44630	51583	211802
12.	A&N Island	177	1134	40	606	217	1740
	Eastern Region	171993	490538	31217	200040	202210	690578
	All India	529392	1865503	138687	921612	668079	2787115

Source: Fifth All India Educational Survey : Selected
Statistics as on September 30, 1986, Pages 24-25 & 80-81.

While designing Inservice Teacher Education Programmes one should ask himself the following questions :

- To what extent the programmes address real problems ?
- What is the purpose of the programme ?
- What are the specific objectives ?
- What is the target group ?
- What is the content ?
- What is the duration ?
- What is the resource team ?
- Should it be theme specific or omnibus type of programme ?
- What instructional materials are to be prepared for the target group ?
- How do we schedule the sessions ?
- What is the number of participants ?
- What is the training modality ?
- How do we monitor the programme ?
- What are the expected outcomes of the programme ?
- How do we evaluate its effect ?
- What follow up is needed ?

Such questions will guide us in formulating useful and meaningful inservice teacher education programmes for elementary school teachers. In this induction training programme you will have ample opportunities to ponder over many issues and problems related to inservice programmes - their planning, management, delivery system modalities, programme transaction methodologies, monitoring, evaluation, feedback, and follow up.

We hope you will find this Induction Level Training Programme to be meaningful and helpful. We look forward to your active participation and cooperation. We treat you not merely as participants but also as resource persons and your experience would be valuable in enriching this programme. Nothing pleases us more than your involvement, and especially in the preparation of perspective Five Year Plans and Annual Calendar of Inservice Programmes (Main and theme specific) for various target groups so that these could be organised by the DIETs in your State.

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DISTRICT INSTITUTES OF EDUCATION AND TRAINING :
FUNCTIONS AND STRUCTURE

1.1 Functions of a DIET

The context, mission and role of the DIETs have been
discussed in the preceding Chapter. Their functions, as spelt
out in the POA, have been quoted in Annex 2. These could be
re-stated as follows :

1) Training and orientation of the following target
groups :

   i) Elementary school teachers (both pre-service
   and in-service education).

   ii) Head Masters, Heads of School Complexes and
   officers of Education Department upto Block
   level.

   iii) Instructors and supervisors of Non-formal and
   Adult Education (induction level and continuing
   education).

   iv) Members of DBE and Village Education Committees
   (VECs), Community leaders, youth and other
   volunteers who wish to work as educational
   activities.

   v) Resource persons who will conduct suitable
   programmes for the target groups mentioned at
   (i) and (iii) above, at centres other than the
   DIET.

2) Academic and resource support to the elementary and
adult education systems in the district in other ways
e.g. by (i) extension activities and interaction with
the field, (ii) provision of services of a resource
and learning centre for teachers and instructors,
(iii) development of locally relevant materials

teaching aids, evaluation tools etc., and (iv) serving as an evaluation centre for elementary schools and programmes of NFE/AE.

3) Action research and experimentation to deal with specific problems of the district in achieving the objectives in the areas of elementary and adult education.

1.2 Structure of a DIET : Certain general considerations

Looking to the above functions, a DIET would need to have staff strength in the following areas :

1) Foundations of Education and Pedagogy.

2) The subjects taught at the Elementary stages : namely

    i) Languages taught at the elementary level the district (these may be two, three or even four, depending on the number of languages which are introduced in a State at the elementary stage, and factors like bilingual character of a district)

    ii) Mathematics

   iii) Environmentals Studies-Social Science

   iv) Environmental Studies-Science

    v) Work Experience

   vi) Art Education

  vii) Health and Physical Education

3) Non-Formal Education

4) Adult Education

5) Curriculum, Material Development and Evaluation

6) In-service Programmes, Field Interaction and innovation Coordination

7) Planning and Management

8) Educational Technology.

1.3 Organisational structure a DIET :
A suggested model

A DIET may have academics in the above specialisms with or without their being organised or grouped into formations like Departments/Branches/Units/Wings. A Branch-wise structure however, seems desirable as it would make for a managable span of control for the Principal, and generally greater operational convenience. While several alternative organisational models could be thought of, on such model is being suggested here not the least for historical reasons, viz., that a similar model was recommended in the Draft Guidelines according to which the Scheme of DIETs has been implemented since October, 1987. The model now suggested would comprise the following seven academic brances :

1) Pre-service Teacher Education Branch (PSTE)- consisting of faculty members in the "Foundations" area as well as in various school subjects (excluding work Experience).

2) Work Experience (WE) Branch

3) District Resource Unit (DRU) for Adult and Non-Formal Education

4) In-Service Programmes, Field Interaction and Innovation Coordination (IFIC) Branch

5) Curriculum, Material Development and Evaluation (CMDE) Branch

6) Educational Technology (ET) Branch

7) Planning and Management (P&M) Branch.

As a general observation, it needs to be immediately clarified that most programmes and activities of, a DIET would involve more than one branches, and the nomenclature of branches given above, indicates principal nodal responsibility, and not total responsibility.

In addition to the above academic branches, there would have to be an Administration Section to provide necessary administrative support. Since DIETs would be expected to organise in-service programmes on a large scale, every DIET would need to have separate hostels for men and women. These hostels should be able to meet fully the residential requirements of training programmes for Adult Education/Non-Formal Education personnel, and in-service training programmes for teachers, and should in addition, provide hostel accomodation to as many pre-service trainees as possible, within the financial norms of the Scheme. The DIET would also have a library which would be rich in professional books and journals, and a part-time clinic.

Each Branch may be headed by a person who would be generally designated as a Senior Lecturer, with necessary number of Lectures to support him, depending on the functions and work-load of the Branch. However, wherever a DIET has a fullfledged DRU, its head will be designated as a Vice-Principal, instead of Sr. Lecturer.

FUNCTION AND STRUCTURE OF IN-SERVICE
PROGRAMMES, FIELD INTERACTION AND INNO-
VATION COORDINATION(IFIC)BRANCH OF DIET.

1. To assist educational authorities in
planning and coordination of inservice education
programmes for elementary teachers throughout the
district, and to plan and coordinate such programmes
held in the DIET, Pursuant to this, the Branch would-

(i) identify training needs of elementary teachers
in the district, and prepare a perspective plan for
meeting such needs,

(ii) prepare an annual calendar of all programmes
to be held in the DIET, and

(iii) help concerned authorities in preparing an
annual calendar of inservice programmes to be held
outside the DIET.

2. To serve as the nodal branch for organising-

(i) all those in-service·education programmes
for teachers and Head masters, at the Institute, whose
content does·not relate exclusively. or pre-dominantly
to any one Branch i.e. programmes of a relatively general/
omnibus nature (e.g. the 'main' programmes referred to in
para 3.3.3).

(ii) Orientation programms for resource·persons
who would conduct in-service programmes for teachers
at other centres in. the district (i.e.outside the DIET).

(iii) in-service education programmes for
teachers in the distance/distance-cum-contact-modes.(A part
from programmer that the DIET may organise in these modes,
on its own, it may also serve as a district level study
centre for such programmes which may be organised, say,
at the state level. IFIC Branch will serve as the nodal
Branch for this purpose as well).

3. To evaluate and monitor the quality and efficacy
of in-serviee programmes held in and outside the DIET, and
to strive for their continuous improvement.

4. To maintain a data-base on all persons, except
NFE/AE personnel, who undergo training at the institute
and to organise follow-up activities pursuant to such
training, through correspondence, visits, transmission -
of printed material, etc.

5. To serve as a reference and resource centres for teachers who wish to continue their education.

6. To act as the nodal branch for all action research, and field interaction (including extension) activities of the Institute which would include, inter alia:-

(i) Coordination of in-house ac-tion research activities and dissemination of its results.

(ii) Acting as a clearning house for information on results of all studies, research, innovation, etc. in the area of Elementary Education-whereʋer undertaken.

(iii) Publication of a periodic newsletter and an institute journal to be sent to every elementary school/NFE/AE centre in the district.

(Extract from D I E T Guidlines M HRD Govt. of India, Nov. 1989, Chapter. 12)

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GUIDELINES FOR PROGRAMMES AND ACTIVITIES

1.1 In-Service Programmes for Elementary Teachers.

1.1.1 Objectives:-

According to the Fifth All India Educational Survey, about 87% of the teachers in the country working at the elementary stage were trained i.e. they had undergone a pre-serviee training course. However, their coverage under programme of in-service education has so far been extremely limited. A teacher may serve for anything upto 40 years. During this long period, requirements of his profession change continously, influenced by changes in policy, priorities , technology, society and the world at large. Continuous in-service education of teaches is necessary to keep them abreast of the changes taking place in their professional environment and to develop their skills and attitudes in the light of their changing role.

The objectives of providing in-service and continuing education to teachers could be summarized as follows:

(i) To develop in every teacher, as far as possibe, knowledgeskills and attitudes which may be necessary for him to function as a competent professional: and to implement the main components of educational policy, and

(ii) To afford teachers, opportunities of professional growth suited to their individual background, aptitude, talent and choice.

The "main components" referred to in (i) above, in the context of NPE, 1986, as far as elementary teachers are concerned, would be substantially those listed in Sections 1 and 2 of Annex 1.

1.1.2 In-Serviee Education of Teachers:Formulation of a Feasible Pattern.

Ideally, decisions about ways of providing in-service education to teachers in a cost-effective manner should be taken based on fidings of appropriate research, keeping in view the objectives and relevant policy areas referred to in the preceeding paragraph. However, research in this area so far, especially in the context of the NPE, is not quite adequate. It is hoped that the NCTE will examine the matter in depth and promote appropriate research in this area so that cost-effective patterns of in-service

education of teachers could be evolved in a local-specific manner. For the present, formulation of a desirable pattern of in-service education has to be attempted on the basis of available expert opinion, and, considerations of feasibility. The latter is, in any case, a very important aspect. For example, considerations of training needs and quality may dictate that every teacher should say, annually undergo one-weak training in the contact mode. But in view of the number teachers, logistic problems and constraints of financial institutional and other resources, it may simply not be possible to provide training on such a pattern. There may, therefore, be no alternative but to organise training of a duration and frequency which may be feasible within the available resources, and to tailor its content so as to fit within such restricted duration by devices such as prioritisation, condensation, etc.

The Education Commission had, in its report submitted in June, 1966, recommended that "there is need for the organisation of a large scale, systematic and coordinated programme of in-service education so that every teacher would be able to receive at least two or three months of in-service education in every five years of service". The National Commission on Teachers-I (NCT-I), in its report submitted in March, 1986, had recommended that "attendance at an in-service training course be made mandatory for every teacher at least once in five years", and that the average length of such a course may be two weeks. The NCT-I had also, in addition, recommended a variety of other methods for providing in-service education to teachers. Relevant portions of Chapter VIII ("The Case for In-Service Education") of the above report may be seen at Annex-6.

The report of NCT-I pre-dated the NPE, 1986. In view of the ambitious goals of qualitative improvement and universalisation stated in the NPE, a single training course of two weeks, once in five years, may prove quite inadequate to achieve the objectibes listed in para 1.1.1. On the other hand, looking to the enormous number of teachers, recommendation of the Education Commission in regard to duration may also be difficult to implement. On balance, a pattern like the following could perhaps be suggested as being desirable and feasible for every teacher to undergo:-

(i) Training in the contact mode of a minimum duration of two weeks (preferably, three to five weeks) over a five-year cycle-through a single contact programme, or more than one, shorter programmes as may be found feasible and effective;

(ii)Regular professional meetings during the academic session at the school complex/teacher centre level. At these meetings:-

(a) teachers could receive in-service education messages through audio-visual aids and through interaction with resource persons and peer group, and

(b) messages conveyed through contact, audio-visual and other modes could be follow up, validated and reinforced through demonstrations, sharing of experiences, etc.

(iii)Professional support through the print and audio-visual media.

1.1.3 Programmes in the contact mode: Logistic

Some of the issues in this regard would be:-

(i) Training in the contact mode of what total duration would be feasible if it is to be provided to every teacher of the district/ State, with a frequency like once in five years?

(ii) Should the above training be imparted in a single, relatively omnibus course or in several, shorter specialized courses ?

While answers to the above questions would vary from district to district and State to State (depending on factors like elementary teacher population, number of untrained/underqualified teachers, available financial institutional and manpower resouces etc), for most districts, the following may possibly turn out to be the most appropriate answer, combining the factors of resource constraint and need for quality and comprehensiveness:-

(i) Duration of training in the contact mode may be two to three weeks,

(ii) For ease of logistics, the above training
may be generally provided in a single,
relatively omnibus programme once in five
years, rather than in more than one, shorter
programmes; and

(iii) Since the DIET would be the best-equipped
training institution in the district, the above
course, when conducted in the DIETs, may be
of three weeks' duration, and when conducted
elsewhere in the district, could be of a more
condensed nature and of two weeks' duration,
if resources do not permit a three week course
all over.

In the rest of this document, we shall refer to the
above, relatively omnibus quinquennial in-service programme
as the 'main' in service programme for elementary teachers.

The suggested duration of three weeks for the 'main'
programme to be conducted in DIETs is not to be taken
rigidly. For example, if a target group consists of under-
qualified teachers, programme of a longer duration may
have to be designed for them. On the other hand, if the
elementary teacher population in a district is very high
and possibilities of organising programmes at other
centres are limited, the 'main' programme even in a DIET
may have to be restricted to two weeks, in the interest
of wider coverage.

Assuming that two 'main' programm s can go on
simultaneously in a DIET at least during vacation
months and one programme (with appropriate gap) during
the rest of the year, a DIET may be able to conduct an
estimated 12-14 'main' programmes in a year. If the
average number of participants in such programmes is 40-45,
a DIET would be able to cover about 500-600 elementary
teachers in a year or about 2500-3000 in a five year cycle.
It follows that if the elementary teacher population
in a district is over 3,000 and every teacher is to be
covered through a 'main' programme once in five years,
such programmes would have to be conducted, in addition
to the DIET, at an appropriate number of other centres
also, in the district. (Examples of 'other' centres
where this programme could be conducted, under the DIETs
overall guidance, would be other institutions of pre-
service/in-service training, higher secondary schools,
lead schools of school complexes, etc.). If, on the
other hand, the elementary teacher population in a
district is below, say, 2500, the resources of a full-
fledged DIET would tend to be under-utilized as far as

in-service training of elementary teachers is concerned.
This is the reason why 2,500 has been taken as a thresh-.
hold elementary teacher population, below which a truncated
structure has been suggested for the DIET in para 2.6.3.

Though, logistically, the 'main' programme may
become the chief modality as far as training in the
contact mode is concerned, the DIET would, at the
same time, also have to organise, depending on local
circumstances and needs, a number of shorter, theme-
specific programmes in areas such as the following:-

(i) Education of first generation learners,
including supplementary remedial instruction
for them and teaching Classes I and II in
tribal languages for teachers serving in
trival areas.

(ii) Education of children with motor handicaps,
and other mild handicaps,

(iii) Education of the gifted,

(iv) Micro-planning and monitoring progress
towards, UPE/UEE,

(v) Courses in the teaching of individuals or
groups of school subjects i.e. Langagges,
Mathematics, Science, Social Sciences, Work
Experience, Art Education and Health &
Physical Education.

(vi) Educational Technology (especially
development of low-cost, improvised
teaching aids , and effective use of A.V.aids),

(vii) Minimum levels of learning,

(viii) Continuous and comprehensive learner
evaluation,

(ix) Diagnostic testing and remedial teaching,

(x) Multi-grade teaching,

(xi) Institutional planning,

(xii) Personality development, value and cultural
education.

(xiii) Implementation of revised curricula and use
of revised textbooks, etc.,

(xiv) Yoga and Physical culture,

(xv) Organisation of extra-curricular activities.

The choice of such programmes to be conducted in
a year, and the duration, content, etc. of each of them
would need to be decided locally, keeping in view such
guidelines as may be laid down at the national or State
level.

Headmasters, Heads of school complexes and officers
of Education Department working up to the block level would
be another target group for in-service training who,
though numerically much smaller, would be extremely
important in view of their key role in educational
reorganisation. The DIET would also have to conduct
appropriate training programmes for them. Efforts may be
made to cover members of these target groups with the
following frequency:-

Headmasters   **:**   Once every three years

Head of School   **:**   Once every two years.
Complexes

Block level officers: Annually
of Education Dept.

1.1.4   In-Service Programmes : Certain General Guidelines.

The following general guidelines would be kept in
view in organisation of in-service programmes in the DIET:-

(i) The starting point should be the identification
of in-service training needs of elementary school teachers
of the district-short-term, medium-term and long-term,
and for different groups e.g. primary teachers, upper
primary teachers belonging to different disciplines,
underqualified teachers, untrained teachers, teachers of
minority institutions, teachers serving in tribal areas,
teachers belonging to various seniority-brackets, etc.

(ii) Based on the above, a plan should be prepared
for a five-year period working out how the above needs
can be best met with the available resources. There would
be distinct advantages in finalizing this plan immediately
after the national and State level Five Year Plan are
finalized, so that it takes full account of the policies,
priorities and programmes spelt out in the latter. This
plan should clearly indicate the extent to which respon-
sibility for in-service training will be shared between
the DIET, and the other institutions in the district.

(iii) Based on the above , a calendar of all programmes
(training, orientation, workshops, etc.) to be conducted in

in a DIET over one academic year, should be pepared
by the IFIC Branch at least three months before the
commencement of the year. This calendar would, inter-alia,
include programmes of the following kinds:-

(a) 'Main' programmes for primary teachers.

(b) 'Main' programmes for upper primary teachers-
if necessary, different programmes for teachers
of different disciplines e.g. Language, Science
Social Studies etc.

(c) 'Main' programmes for headmasters.

(d) Shorter, theme-specific programmes for the
above target groups.

(e) Training programmes for heads of school
complexes and block Education Officers.

(f) Training programmes for resource persons who
would conduct 'main' or other programmes at
centres other than DIET.

(g) Induction training programmes for AE/NFE personnel.

(h) Annual refresher training programmes for
AE/NFE personnel.

(i) Orientation programmes for members of DBE,VECs,
community leaders, youth and other educational
activists.

(j) Workshops for development of locally relevant
curricular units, teaching-learning material,
teaching aids, testing and evaluation tools, etc.

(iv) Since the 'main' programmes would form the focus
of in-service training activity, certain guidelines for
them would be evolved at the national and state levels.
Based on these, every DIET would design its own set of
"main" programmes looking to local needs.Such programmes
would tend to have a common core, along with other components
which would be tailored to meet the specific needs of the
individuals district/target group.

(v) The DIET will send its annual calendar of
progra mmes as soon as it is ready, to the District
Education Officer (DEO) and managements of non-Government
schools. The DEO/Managements will cause teachers to be
sponsored for individual programmes, in such a manner that
the list of teachers sponsored for a particular programme
will reach the DIET at least three months before its

commencement. Teachers who have less than three years
to go for retirement, and trained teachers,, who have
joined service less than three years ago, may generally
not be sponsored, especially if the elementary teacher
population of a district exceeds 3000.

(vi) Intake in a 'main' programme may be kept
at 40-45, and 'over-sponsoring' may be done to a suitable
extent to take care of last minute changes, drop-outs, etc.

(vii) For every programme to be organised in a
DIET, a faculty member will be designated as the Course
Director. He would usually be from the Branch which has
nodal responsibility for that particular category of
programmes.

(viii) As soon as the DIET receives nominations for
a progamme, it will send to every deputed teacher the
following:-

a) A basic outline of the course-its objectives
content and methodology,

b) Relevant printed material,

c) A questionnaire to elicit information
about the participant's professional
background, strengths, training needs,
and expectations, from the course, and

d) Joining instructions.

(ix) The DIET should insist on receipt of the filled·
out questionnaires at least a month before
the commencement of the programme. The information so
received should be quickly analysed to ascertain partici-
pants' needs profile, and the non-core part of the progra-
mme as also the methodology for the 'core' part should
be designed accordingly.

(x) Objectives/expected outcomes of every programme
should be clearly spelt out in terms of trainees' knowledge
and skill levels, and attitudes which it seeks to develop.
The programme should be carefully designed so that it
actually leads to the expected outcomes.

(xi) In regard to training methodology, statements
contained in sub-paras (iv) and (v) of para 3.2.2. would
apply. In addition, training inputs which are in the
nature of simple information (as opposed to skills or
major concepts) may be transmitted largely through printed

material sent to trainees in advance, rather than
in the face-to-face modality.

(xii) Participants should be treated not merely
as trainees but also as resource persons for the programme,
and their experi nces should be fully utilized to enrich
the programme.

(xiii) For every programme, a two-pronged evaluation
exercise should be conducted as follows:-

a) Participant Evaluation:

The modality for this should as far as
possible be self-evaluation. At the end of every sizeable
module, participants may be given a short problem,
exercise or test, followed by supply of standard answers
so that they could assess know their level of learning
for themselves. A similar exercise could be conducted
at the end of the programme well. The purpose of this whole
evaluation process should be diagnostic and remedial.
Low performance should not have adverse consequences
for the trainee, but should lead to more intensive
follow-up in such cases by the DIET. This whole approach-
that the evaluation exercise is meant only to professionally
help the trainees, and would not adversely affect them in
any way should be clearly explain.d to them so that they
cooperate fully, and benefit from it .

b) Programmes and Faculty Evaluation:

Every participant should also be given
well designed questionnaire to elicit his assessment and
suggestions about the effectiveness of the programme
and the faculty associated with it. Feedback so received
should be quickly analysed and utilized to improve
future programmes.

In addition to the above written
exercise in evaluation, at least one session on the
last day of the programme should be devoted to a free and
frank exchange of views, on the programmes effectiveness
and level of participation. In case of programmes of longer
than one week's duration, the course Director should also
hold informal session with participants at the end of every
week in order to get regular feedback.

1.1.5 In-Service Education of Teachers: Other Modalities.

Programmes of in-service education in the contact mode have been discussed in the proceeding two paras. However, the contact mode is expensive and has limitations in terms of numerical coverage. As mentioned in para 1.1.3 in district having over 3000 elementary teacher population, DIETs' efforts would have to be supplemented through 'main' programmes organised at other centres as well. However, in distticts where teacher population is very high and/or possibility of conducting training programmes at other centres is limited, alternative stra tegies on the lines indicated below would have to be adopted:-

1. The 'cut-off period' of three years mentioned in sub-para (v) of para 1.1.4 may be increased upto five years. .

2. The DIET may aim at covering-through its own 'main' programmes-say, two teachers from every elementary school, of whom one would be the Head Master.

3. A School Complex and/or School-based programme of in-service education may be organised especially for the benefit of teachers who cannot be covered in contact programmes. Teachers-trained at the DIET as at (2) above could serve as resoutce persons in such a programme, besides others e.g. faculty from the DIET and otrer teacher education institutions Higher Secondary Schools, Block Education Officer etc. The DIET and the DEO together would need to work out details of such a programme looking to local circumstances, and the DIET would have to provide full academic and resource support in its implementation.

4. The DIET may also produce and distribute appropriate printed modules and self-learning packages to enable elementary teachers to learn on their own, as well as in School/ School-complex-based manner descsribed above. Operationalising (3) and (4) above would need a good deal of innovativeness and careful planning and execution.

5. As a DIET gains experience and competence in conducing in-service education of teachers in the distance mode, it could work towards changing the modality of the 'main' and other

programmes from 100% contact to a distance-cum-
contact mode. With this, the duration of the
'contact' would get reduced, and greater
numerical coverage would become possible.
However, such a switch-over would have
considerable academic a nd organisational
implications, which would have to be taken
care of.

Even where all elementary teachers of a district
can be covered in the contact mode once in five years,
modalities indicated at (3) and (4) above would still be
useful by way of supplementing training in the contact
mode.

1.2 Field Interac-tion (including Extension) activities.

1.2.1 One of the main shortcomings of existing
Elementary Teacher Education Institutions (ETEIs) has
been their generally low level of contact with the field
i.e. with schools, teachers, NFE/AE Centres and their
instructors. This perhaps was partly due to non-fostering
of an appropriate culture, and partly due to lack of
necessary where-withal in the ETEIs. The NPE and POA
clearly dictate an end to t,is situatdn of isolation.
Therefore, from the start, a fundamentally different
culture will need to be fostered in the DIET so that
that it maintains the closest possible contact with the
field. Activities taken up in pursuance of this may be
described as 'Field Interaction' acativities and would
be one of the chief modalit'es of providin, resource and
learning support to elementary schools and AE/NFE Centres.
In specific terms, field interac-tior would have the following
main aims:-

> (i) Identification of the practical problems being
> faced in the field so as to devise ways of
> tackling them,
>
> (ii) Obtaining information about worthwhile ex-
> perinces, innovations, success stories etc.and
>
> (iii) Provision of academic guidance, advice
> extension and resource support to the field
> (including sharing of resources).

For purpose of convenience, field interadtion
activities may be classified into:-

> i) extension work, and   ii) other activities.

These are briefly discussed below.

1.2.2   Extension: By "extension" is meant dissemination among educational workers (teachers, instructors etc.) of all information and messages which need to be disseminated for effective implementation of policies, programmes and interventions in various areas of a DIET's concern. Such information/messages could relate, inter-alia, to the following matters:-

    i) New Policy decisions, programmes and initiatives,

    ii) Results of new research studies, experiments and techniques developed, e.g. for improving enrolment, retention, attainment levels, etc.

    iii) Any other matters of professional interest to the teacher/instructor.

Dissemination of information as above in the district would be primarily the responsibility of the DIET. One way in which information will be so disseminated would be the in-service education programmes which the DIET would organise. However, as we have seen, the frequency with which a teacher would attend such a programme may be no more than once in five years. It would, therefore, be imperative to organise extension work in several other ways so that necessary information and messages reach the grassroots educational workers in a regular and timely manner. Some of these modalities could be:-

    (i) Periodic meetings/seminars/conferences of block level functionaries and heads of school complexes so th t they could, in turn, disseminate information/messages in monthly meetings of heads of schools/ school complexes/ teachers/supervisors/instructors. These meetings seminars, etc, would be distinct from training programmes for these functionaries referred to in para 1.1 and 1.1.1 and may be of one, two or three days' duration. Their frequency could be quarterly for block level functionaries and six monthly or annually for heads of school complexes.

    (ii) Publication of a newsletter and an institute journal to be sent to every school/NFE Centre/ AE Centre in the district. The newsletter may be published quarterly. The institute journal may be published annually to begin with. Later, as it gets established, it could be brought out bi-annually. The newsletter

will contain useful information in capsule form while the journal may publish full-fledged articles, reports, action research papers, etc.

While the publication of newsletter/journal would be the responsibility of the IFIC Branch and its Senior Lecturer may act as editor for both of them, their editorial board may comprise a suitable number of other faculty members as also pre-service trainees of the Institute who may be interested in this work.

(iii) Production of pambhlets, brochures, research abstracts, etc. and their distribution among school complexes/schools/AE and NFE Centres.

(iv) Circul tion of video and audio cassettes, slides and various other teaching aids among schools/school complexes/projects and centres of AE/NFE.

(v) A systematic programme of visits by DIET faculty to school complex meetings/individual schools/AE and NFE centres, and of bringing Head Masters/teachers/instructor to the DIET for exposure to new ideas, information and materials.

(Extracts from D I E T Guidlines M HRD, Govt. of India, Nov. 1989, Chapter . 3).

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MICRO PLANNING AND MONITORING PROGRESS TOWARDS
UNIVERSALISATION OF ELEMENTARY EDUCATION

Dr. D.K. Bhattacharya

1. Overview

Universalisation of Elementary Education has been
considered as a priority area since long in our country.
Inspite of considerable progress achieved towards providing
free and compulsory education for all children upto the age
of 14 years we are yet to achieve the goals of Universalisa-
tion of elmentary education due to various geo-physical,
sociocultural and techno-economic contraints. A large number
of rural habitations specially located in disadvantaged
regions/tribal areas/hilly tracts/deserts and isolated
ccłets could not be covered by primary education facilities.
A large number of rural primary schools do not have minimum
physical facilities and many such schools are single teacher
schools. According to fifth All-India Education Survey(1989)
51.36 percent habitations are having primary schools/sections
within the habitation and 84.45 percent habitations are having
primary schools/section within walking distance (1 km.)
Percentage of habitations having upper primary schools/
ctions within the habitation and within walking distance
(3 kms.) are 13.25 percent and 75.80 percent respectively.
Again, 80.34 percent rural population are served by primary
schools/section within the habitations and 94.60 percent
rural population are served by primary schools/sections within
walking distance (1 km.) The corresponding percentage of
ral population served by upper primary schools/sections
within the habitations and within walking distance (3 Kms.)
are 36.98 percent and 85.39 percent respectively. The gross
enrolment ration in classes I - V and VI - VIII were 93.63
percent and 48.51 percent respectively. Percentage of girls
enrolments in classes I - V and in classes VI - VIII have

increased from 38.27 percent to 41.16 percent and from 32.70 percent to 35.45 percent respectively during the period from 1978 to 1986. Enrolment in class V as percentage of enrolment in class - I has increased from 36.46 percent in 1978. This reveals that still approximately 50 percent students those who had enrolled in class-I drops out by the time they reach class-V. A large number of primary schools do not have minimum physical facilities, and learning materials/furniture/ equipments etc. Consequently they provide sub-standard and cheap elemementary education.

2. Dimension of UEE

In the background of such a scenario the goals of universalisation of elementary education could be achieved through following dimension :

    2.1 Universal access to facilities

    2.2 Universal enrolment

    2.3 Universal retention

    2.4 Universal completion

    2.5 Universal attainment of minimum level
        of learning.

Universalisation of elementary education in term of universal access to facilities, universal enrolment, universal retention, universal completion and universal attainment of minimum levels of learning could be achieved through effective planning and continuous monitoring of progress of UEE. In view of wide geo-physical, socio-cultural, techno-economic and structural divergences of needs and conditions of various micro regions of our country, there is a wide disparity in the provision of access to facilities, enrolment, retention, completion and attainment of learning among various socio-cultural/socio-ethnic groups, micro regions and areas. Consequently, elementary education could not become relevant to the needs of local community. The goals of UEE could be

achieved through micro-level or grass-root level planning and monitoring of progress. The planning and monitoring needs are to be identified in respect of various dimensions of universalisation of elementary education as highlighted earlier.

2.1 <u>Universal access to facilities</u>

2.1.1 In order to achieve universal access to facilities 'school mapping' exercises are to be undertaken to identify the deprived areas where primary schooling facility does not exist and to ensure that every habitation which potentially have 50 children in the primary school should be provided with one upper primary school opened on primary school catchment basis.

2.1.2 For SC/ST and other disadvantaged groups facilities of more residential schools and hostels should be created. Detailed plans could be prepared for designing inexpensive residential schools where school building could be used for residential purpose at night with an additional provision of kitchen where local people/Panchayet/Voluntary agencies could be involved in cooking and supervision. In order to plan school mapping exercises and designing of inexpensive residential system for SC/ST and other deprived sections the following tasks are to be undertaken.

2.1.3 Survey of the location of the existing primary and upper primary schools/NEE centres located in the habitations classified as per population structure.

2.1.4   Analysis of demographic, pedagogic, geogra-
        phical, economic, socio-cultural and other
        related constraints contributing to locational
        disadvantages.

2.1.5   Formulation of norm-based perspective plans.

2.2 Universal enrolment

Fifth All India Educational Survey data (1989)
has highlighted the emphasis on enrolment of girls,
enrolment of SC/ST and other disadvantaged sections.

The reasons of non-enrolment of children
belonging to various categories of disadvantaged
population are not uniform. Therefore uniform
planning modality can not be adopted for enhancement
of enrolment for various categories of children.
Separate planning modalities are to be designed for
enhancement of enrolment of children belonging to
various categories such as girls, SC, ST and other
disadvantaged sections.

This planning approach is known as Target
Group Approach. The following tasks may be undertaken
for formulation of Target Group Approach for
enhancement of enrolment.

2.2.1   House - to - house survey may be undertaken
        to identify the number of non-attending
        children, the reasons of non-attendance and
        specially the reason of reluctance on the
        part of the parents to send their children
        to schools. During such survey the teachers
        in cooperation with the village community
        may discuss with the parents the relevant
        benefits of schooling and of regular
        attendance.

2.2.2 Display of materials prepared by the students on different occasion.

2.2.3 Invitation to parents and guardian to participate in the school programmes so as to give them an idea about the activities of the school.

2.2.4 The teacher/functionaries assigned the task of house-to-house survey may identify from the parents of non-attending children who will go for part-time or full-time (non-formal or formal) instruction.

2.2.5 For new enrolment the teacher may extend door to door counselling.

2.3 Universal retention

In order to ensure universal retention of children the following strategies could be adopted:

2.3.1 Children should be encouraged to attend the school.

2.3.2 The teachers task is not only to organise teaching-learning or to evaluate the achievement of the children but also to create an atmosphere in the school which will help the children to stay at the school and enjoy satisfying learning experiences.

2.3.3 Rapport with the parents is essential for retention. The teacher may try to know the real reasons of dropout and non-attendance. He may visit homes of dropped out children and meet their parents. The help of village panchayet local influencial persons/voluntary agencies could be sought for persuing the parents to send their children to schools.

2.3.4 The schools calender or timings could be adjusted as per the needs and requirements of working children.

2.3.5 Quality improvement programmes in the form of remodelling teacher training and designing of teaching-learning materials could be undertaken.

2.3.6 A policy of non-detention may be followed.

2.3.7 Targets of retention to may be fixed to ground level realities through a decentralised and participative mode of disaggregated planning rather than fixing target in adhoc fastion.

2.3.8 School timings may be fixed to morning, afternoon or evening as per the convenience of the majority learners.

2.3.9 School calender may be adjusted to agricul-tu. 1 tural operation local festivals and weekly markets.

2.3.10 Child centered approach should emphasise reduction in school hours but increase in learning hours through:

2.3.11.1 introduction of inquiry approach

2.3.11.2 play-way

2.3.11.3 activity based methods

2.3.11.4 creative writing

2.3.11.5 peer group learning

2.3.11.6 experimentation

2.3.11.7 creative use of singing, drawing, story telling, particularly of folk lores and folk arts.

2.4 Universal completion

Mere accessibility, enrolment and retention are
not enough for realisation of the goals of univer-
salisation of elementary education. It is also
equally important to ensure that all learners
complete the course prescribed for primary and upper
primary levels of elementary education. In order to
ensure universal completion instructional planning
and reforms are to be initiated. NPE: 1986 - POA
had observed that 'The most important aspect of
this reform will be to make education a joyful,
inventive and satisfying learning activity, rather
than a system of rote and cheerless authoratarian
instruction.

2.5 Universal attainment of minimum level of learning

It is to be ensured that minimum level of
learning competancies are realised. With this end
in view there is a need :

2.5.1 to identify the minimum level of learning
competencies which every child is supposed
to acquire in various subject areas and
with reference to each instructional unit.

2.5.2 to frame specific objective of instruction
on the basis of the identification of
minimum level of learning competencies.

2.5.3 to evaluate the performance with reference
to specific objective.

Thus Micro-Level Planning for Universalisation
of Elementary Education involves following aspects:

3.1 Accessibility planning

1 Accessibility planning coul be undertaken
through :

3.1.1 School Mapping Exercises at block level on
the basis of Fifth All India Educational
Survey data and guidelines prepared by
MHRD/NIEPA from time to time.

3.1.2 Designing of inexpensive residential system.

3.1.3 Norm-based perspective plan for locational
advantages.

.2 are : level Planning:

4. level enrolment planning
could Target Group Approach and may
include the following steps :

3.2.1 Bl ck wise listing of villages and town-wise
list or of Wards/mohallas.

3.2.2 Identification of the catchment area of
each primary/upper primary school located
in each village or in each ward/mohalla in
urban areas.

3.2.3 Survey of children belonging to the age
group 6-14 years residing in a well
demarcated areas like village, ward/mohhalla
etc., identification of reasons of non-
attendance and dropout and classification
of non-attending school-age children into
formal non-formal category depending on
the availability of time and level of
involvement of the children in working
situation.

3.2.4 Ensuring involvement of local community/ panchayet educated youth/voluntary agencies in enrolment planning.

3.2.5 Demarcation of an area to be covered by a primary school complex around an upper primary school on the basis of habitation- wise village-wise, ward-wise, mohalla-wise list of primary schools and NF education centres. Block Education Officer could undertaken this exercise at block-level in collaboration with other local functionaries.

3.2.6 Area-level enrolment planning would involve formulation of micro-level statistical indicators like :

3.2.6.1 Gross Enrolment Ratio (GER)

3.2.6.2 Net Enrolment Ration (NER)

3.2.6.3 Age-Specific Enrolment Ratio (ASER) .

3.2.6.4 Admission Rate.

3.2.6.5 Apporent Admission Rate.

3.2.6.6 Age-Specific Admission Rate etc.

3.2.7 Though enrolment planning will be initiated at Area-level eventually it will take the shape of multi-level enrolment planning as shown below :

Institutional level

Village/ward/mohalla level

School complex level

Block level

District level

3.3 Retention planning

Planning for retention of children in primary and upper primary schools would involve :

3.3.1 Planning for quality improvement in the shape of reform in pre-service, teacher-training, reform in inservice-training, modification in teaching-learning materials, implementation of 'Operation Black Board' etc.

3.3.2 Retention Planning would require formulation of micro-level statistical indicators like transion rates from primary to upper primary level, retention rate, dropout rate etc.

3.3.3 Academic planning would involve reduction of school hours but increase in learning hours through adoption of child centred approaches like enquiry approach, play-way, activity based methods, creative, writing, peer group learning, experimentation and creative use of singing, drawing, story telling parti;ularly folk lo_es and folk arts.

3.4 Planning of completion and attainment of minimum level of learning

Planning of completion and attainment of minimum level of learning would involve :

3.4.1 Formulation of micro-level planning indicators like promotion, rate, repetation rates, teacher-pupil ratio, work-load of teachers.

3.4.2 Institutional planning.

3.4.3 Planning of evaluation.

3.5 Monitoring strategies

3.5.1 The progress achieved in the areas of accessibility, enrolment, retention completion and attainment of minimul level of learning is to be monitored continuously for feed back to implementation agencies. DIET can play a vital role in monitoring the progress towards realisation of goals of UEE.

3.5.2 Both qualitative and quantitative aspects of the implementation of UEE as stated above should be monitored.

3.5.3 Monitoring agencies could be :

3.5.3.1 officials of education department posted at Block level/District level.

3.5.3.2 school complex.

3.5.3.3 Village/Panchayet Education Committee.

3.5.3.4 Block level Education Committee.

3.5.3.5 DIET.

3.5.4 DIET should coordinate the monitoring activities and should define the specific roles and functions of various agencies:

3.5.4.1 Area level monitoring would be followed up by multi-level monitoring. -

3.5.4.2 Systematic monitoring would require Information-bare characterised by collection, recording, compilation, verification discrimination and interpretation of data.

3.5.4.3 Quarterly and Annual progress report is to be prepared.

3.6 <u>Teacniques of monitoring would include</u>

    3.6.1 Meeting with parents/community members in order to persuc the relactant guardians/ non-attending children /ith a request to resume attendance.

    3.6.2 Meeting involving various monitoring agencies for assessment.

    3.6.3 Dissemination of records/reports.

    3.6.4 Arriving at appropriate decision.

3.7 <u>Levels of monitoring various types of monitoring are:</u>

    3.7.1 Micro-level monitoring

    3.7.2 Area-level monitoring

    3.7.3 Multi-level monitoring.

<u>Exercises</u>

Please indicate specific steps to be taken by your DIET considering the local situations.

A. <u>Accessibility Planning</u>

    1.
    2.
    3.
    4.
    5.
    6.

B. <u>Planning of Enrolment</u>

    1.
    2.
    3.
    4.
    5.
    6.

C. <u>Planning of Retention</u>

 1.

 2.

 3.

 4.

 5.

 6.

D. <u>Planning of Completion and Achievement</u>
<u>of Minimum Level of Learning</u>

 1.

 2.

 3.

 4.

 5.

 6.

E. <u>Monitoring of Progress of UEE</u>

 1.

 2.

 3.

 4.

 5.

 6.

* 0 *

Module No. 2 .

INSERVICE MODALITIES

Dr.Sushil Kumar Go[

BACKGROUND:

The need for a continuing programme of inservice training to raise the qualifications of teachers and to update their knowledge and skills cannot be over-emphasized. Education connotes continuous growth, particularly so for teachers and other educational personnel. Inservice education refers to all ac.tivities on the part of employed persons that contribute to the professional growth and qualifications, e.g., travel, professional reading, participation in seminars workshops, conferences, postal tuition, lectures, demonstration of new experiments/teaching aids/equipments,educational programmes on Radio/T.V. etc. to create in them a feeling of security and a sense of self-confidence in the discharge of day-to-day duties.

In this age of science and technology, many new modern developments are taking place and the fresh information is being generated at an exponential rate and there is information explosion in every branch of knowledge. The old traditional and conventional ideas' and teaching methods are inadequate and do not meet the present day requirements. With the increasing complexity of problems and latest advacements in every field, the expectations from the teachers are also increasing. If they fail to keep abreast with the latest developments and frontiers of knowledge, they will be giving yesterday's education to tomorrow's citizens. Thus a teacher must continue to learn and grow professionally so that he can create a thirst for knowledge amongst his pupils.

INSERVICE MODALITIES:

A number of modalities like 'Face-to-Face', "Distance and "Relay" can be used for in-service education. Under these heads, various techniques for inservice education are given below:

1. Workshops: In the workshops, emphasis is laid on practical work. The workshop broadens the professional outlook of the participants and provides sufficient scope for cooperative group work. The participant gets an opportunity to study the problem in depth which has arisen out of his experience as a teacher. Each participant offers his suggestions which are very useful for group discussion. The usual schedule of the workshop consists of general sessions and small group meetings, free time for individual study, lectures and video film shows, field trips and presentation of workshop reports.

2. Seminars and Conferences: A seminar is a small class or group for discussion, and technique, knowledge and experience are gathered by collective and cooperative efforts. Conferences of teachers, supervisors and administrators can broaden the range of experience and cultivate professional team-spirit.

3. Refresher Courses: They are very useful for professional growth of teachers as they help in updating their knowledge and experience. The course may include new educational plans, policies and schemes introduced by government and other agencies. Experienced faculty members and education officers from University deptts, training colleges and government deptts. may be invited to conduct the refresher courses.

Summer and Winter Institutes:

Through these institutes, teachers can refresh and update their knowledge and learn new methods and techniques from experts as well as from the teachers coming from different school systems. Teachers once again feel a taste of student life which adds to their enjoyment of life. They can utilize their vacations properly and return to the schools better equipped to meet the challenges of new education.

There are many agencies like Training Colleges, University Departments of Education, Directorate of Education NCERT, etc. which can collaborate in making arrangements for these institutes.

Lectures:

This is one of the oldest methods for inservice education and teacher-orientation tasks. The lecture is primarily meant for the transmission of knowledge and is purely aural-oral activity. It can be used with groups of any size. Though visualised lectures usually require smaller groups, use of projection equipment and mike can be used even for very large groups. Experts from various disciplines may be invited to deliver lectures and have direct interaction with the student-teachers.

Project Groups:

Project group work may be organized with a tangible end-product in mind. The groups can conduct surveys of community and acation research, assess school, block or district educational programmes, design, suitable courses of study by updating the curricula with modern developments and suggest elimination of obsolete information. Group

discussions, surveys and suggestions from educationists may lead to successful accomplishment of project work.

Field Trips:

Lecture and reading activities should be combined with field trips which will help the teachers to see on-going operations related to their jobs. These may take the form of community tours, city tours, state tours, or even a foreign tour. The teachers may get first hand experience of many developments taking place throughout the country and may supplement vital information in the classroom situation.

Demonstrations:

The demonstration emphasises aspects of operational behaviour that observers need to see. The needs of the observers must be looked into before planning any demonstration. Only skillful demonstrators are selected for the purpose. Also the physical environment should be suitable so as to ensure clear vision, hearing and smooth demonstration. Observation guides may be prepared for the observers so that they not only look but also analyse, record and tabulate to draw generali ations and make applications.

Directed Practice Activities:

The need for skill development e.g., skills for the preparation of instructional materials, audio-visual aids, lessons, etc. may be indicated by classroom obser-vations. An experienced teacher whose teaching helps in important skills development should be observed and followed by directed practice sessions with the help of resource persons.

Film Shows:

"Film shows" is a form of visualized lecture by remote control but it certainly lacks live narration. However, if the film show is followed by discussion, it can serve as a useful technique for inservice training.

Correspondence Education:

The correspondence education is an innovative channel with the clear cut objective of "equalization of educational opportunities", promoting, learning and earning together, breaking the walls of formal education. Correspondence education is a method of teaching in which the teacher bears the responsibility of imparting knowledge and skills to the students who do not receive instructions orally but who study in different places determined by their individual circumstances. It takes care of those teachers who are not free at school hours, physically handicapped, expectant mothers, housewives and also those who are very old. This technique can prove very effective for inservice training. Various universities have started various courses which can go a long way in helping the teachers to et inservice education and improve their qualifications and status.

In order to make correspondence education more effective, it is essential that personal contact programmes for the trainees be organized. The duration and frequency of such a contact programme will depend upon the theme of the course being studied and the capacity of the institution to organize them. Thus the difficult areas of the study are explored by way of classroom teaching, seminars, debates, panels a nd exposure to the renowned experts of the field. Such contact programmes are absolutely necessary in professional, technical and

highly academic courses, but desirable in all the courses of correspondence teaching.

Correspondence-cum-Contact Course:

Because of the very large number of untrained teachers working in schools, it is not possible to provide training for them in the regular courses. The colleges do not have the capacity to admit them and neither it is possible for the teachers to leave their jobs for a year and come for training. Therefore provision has to be made to train them through correspondence-cum-contact courses. The four Regional College of Education of the NCERT carried out this training for the inservice teachers, each for its own region. The course content is broadly the same as that of the regular B.Ed. course of the college. The student-teachers receive a degree after completion of the course from the University to which the college is affiliated.

The contact programme is conducted during summer vacations and the regular classes are held for about two months. Lessons are se t to the stude t-teachers by mail in the following nine months. The trainees are expected to send in assignments which are evaluated and mailed back to them. Practice teaching is also arranged under the guidance of a supervisor appointed by NCERT. Student-teachers who have completed their assignments and practice teaching are called for the second contact programme in the following summer vacation. About twenty-five percent of the content is covered by correspondence and seventy five percent in two summer contact programmes.

EXPERIMENTAL PROJECTS:

Most of the findings of educational research have been observed to have little or no influence on school practices. If a teacher conducts an experiment, he learns in the process, it will have immediate impact on his work and increase his involvement in the work. But the school budget hardly makes any provision for additional expenditure on experimentation. NCERT has a scheme of giving grants to enable teachers to carry out worth-while experimental projects. Under the scheme, ideas for research and experimentation are invited from teachers. Most of the projects are in the nature of acation research. NCERT has conducted some programmes to provide guidance to teachers in designing experimental projects. Training has also been provided to resource persons in the states to enable them to guide and supervise the projects.

Seminar Readings:

Teachers and teacher educators are invited to write papers based on their experimentation, innovation and creative thinking. The papers are submitted to the respective state Institutes of Education. On Scrutiny by SIEs, the best papers are forwarded to NCERT for final screening. They are four separate competitions, one each for elementary teachers, secondary teachers, elementary teacher educators and secondary teacher educators. Cash prizes are awarded for the best teachers. Contributors of the award winning papers are awarded to seminars to discuss their papers.

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PLANNING OF INSERVICE EDUCATION PROGRAMMES

Dr, D.K.Bhattacharjee

1. Overview:

The programme of in-service education of the teachers has
attained unprecedented prominance in recent years. Professional
development of teachers and other functionaries of education
system has been considered as equally vital as curricular reform,
new policy directives, financial bogictics and other factors
for initiating qualitative chnge in the system of school education.
Teacher and other functionaries of education system should have
opportunities to be constantly informed about new developments,
to judiciously select alternatives and to make periodic
judgement in regard to the adequacy of teaching methodology
and skills in the classroom and to assess learning outcomes.
Every teacher should have access to technical assistance so that
they could act appropriately for cumulative skill matery, apply
theory in practice, plan instructional programmes effectively,
assess shortcomings of instruction and improve it through his
own experimentation. Inservice education programmes can help
the teacher to acquire universally applicable competencies such
as individualised learning, motiveting children and pacing
lessons. It can also focus on teaching skills, alternative
teaching methodologies and integration of content, methodology
and skills.

2. Emerging Thrusts and Perspectives:

2.1 Uniform pattern of inservice programmes may not be relevent
for all the primary and upper primary teachers teaching in
different districts. The in-service programmes for the teachers
are to be designed and organised on the basis of local needs.

2.2 There is also a need of designing in-service education progra
mmes for functionaries like headmasters, Head of School Complexes,
Block Education Officers, Resource Persons, AE/NFE personnel and

members of DBE, VECs, Community Leaders, Youth and other educational activists. Inservice Training packages are to be designed for different target groups keeping in view the local needs and requirements.

2.3 Since primary teachers, upper primary teachers and headmasters of elementary schools are the principal human inputs or principal agents of change in the process of modernisation of elementary Education, 'Main Programmes' are to be designed for them.

2.4 Designing of inservice programme for various target groups should be less prescriptive and more flexible since the problems of elementary education imparted through both formal and non-formal channels are widespread and the problems of each school/ each block/each district are unique.

2.5 Diversity in planning and designing of in-service programmes are to be encouraged since all aspects of professional competence cannot be dealt with through single strategy.

2.6 There is a need of greater emphasis on practical application of theories.

2.7 Improvement of quality of teaching-learning is to be viewed as central focus.

2.8 The participants of in-service programmes will play a major role in determining the objectives, the content, transactional methodology of inservice educ.tion programmes as well as in assessing pragmatic strength and weakness of the programme..

2.9 The consultants, the subject specialists, the resource faculty and the designers of in-service education package should have a high degree of practical experience.

2.10 In-service education programmes imparting differentiated training experiences for teachers belonging to different level, are more likely to accomplish their objectives than the programme which prescribe common activities for all participants.

2.11 In-service education programmes that emphasize trainee-active/participative approach, investigation, demonstration-cum-discussion, practicals, project work, problem solving, sharing of experiences, transaction of message through audio-visual modes, discovery learning, field visits, self-study, case studies and dissimination of success stories and innovations are likely to accomplish their goals.

2.12 The in-service education programme should focus on the problems he or she encounters in his or her area of operation i.e. in classroom by teacher, in planning and management by headmaster or Block Education Officer. etc.

2.13 Inservice Education for various target groups should emphasize/various alterntives in instruction/ planning/management/ supervision/strategies rather than single method or single strategy.

2.14 The training units should be sufficiently flexible to allow/ various target groups to begin at their own level and to progress at their own speed.

2.15 Inservice education programme should encourage educational innovations whenever possible.

2.16 The central focus of inservice education for primary and upper primary school teachers is the remediation of teachers defeciencies in the subject areas, teaching methodology and various skills and competancies.

2.17 Inservice Education programme should become a permanent feature of education system so that the growth of professional coppetency is sequential and continuous.

3. Objectives:

The objectives of in-service education programme are:

3.1 To enhance professional competancy of the concerned target group based on local needs and requirements.

3.2 To improve the quality of teaching learning through practical application of theories, integration of content-methodology and skill, formulation of alternative strategies in instruction/

planning/management/supervision/monitoring, application of innovations and conduct of experimention.

3.3 To dissiminate informations in regard to new policy decision, programmes, policy initiatives, results of experimentation/research and matters related to professional interest of teachers and other educational functionaries.

3.4 To provide resource support and professional services to schools/other agencies.

3.5 To promote action research ad field interaction (including extension) on felt needs/problems of teachers and other concerned functionaries.

3.6 To evaluate and monitor the effectiveness and performance of the programmes.

4. Pattern of Incentives/benefits:

The pattern of incentives for various target group for parttcipation in in-service programmes are:

4.1. To obtain credentials/certificates on completion of Courses

4.2 To get recognition for promotion/increments/positions/ change of cadre/crossing effeciency bar/ and in-service record buck etc.

4.3 To enhance professional competency.

4.4 To derive job satisfaction.

4.5 Improvement in quality of teaching-learning and consequent improvement in quality of school education.

5. Target Group Specification:

Various target groups to be covered by inservice programme are:

5.1. Primary teachers/upper primary teachers.
5.2 Trained teachers.
5.3 Untrained teachers
5.4 Underqualified Teachers.

5.5   Teachers teaching various subject areas.

5.6   Teachers teaching disadvantaged learners e.g. tribal, handicapped, slow learners etc.

5.7   Teachers belonging to various seniority seniority bralkets.

5.8   Headmasters of primary/upper primary schools.

5.9   Heads of School complexes

5.10   Block Education Officers.

5.11   AE/NFE.personnel

5.12   Members of DBE, VECs, community leaders, Youth and Other Educational activsts.

6.   Delivery system Modalities:

       Inservice programme delivery system modalities may take following form:

6.1   Workshop/orientation programmes designed at national level (NCERT level for example).

.6.2   Workshops/Orientation programmes designed at state level (SCERT level for example).

6.3   Workshops/Orientation Programmes designed at district level (DIET level for example).

6.4   Induction-level training programmes designed centrally.

6.5   Induction-level training programmes designed at DIET level

6.6   Short-term/medium term Refresher Training Programmes for various target groups.

6.7   Teacher Centred training course comprehensive, medium term, short term.

6.8   School centred training courses comprehensive, medium term, short term.

6.9   Subject centred training courses comprehensive medium term, short term.

6.10   Target group centred training course comprehensive, medium term, short term.

6.11 Faculty Development programmes.

6.12 Courses for improvement of Resource facilities.

6.13 Theme specific programmes for specific target group shortte

6.14 Workshop for preparation of courses/materials.

6.15 Advance level training programme.

7. **Planning Inservice Education Programmes:**

Planning/Designing of inservice programmes involves the following steps:

7.1 Identification of Training Needs of various target groups.

7.2 Classification of Training needs into priority training nee and routine training needs.

7.3 Preparation of a Perspettive Plan incorporating releveht delivery system modalities i.e. Comprehensive Training Courses of Medium term, Training course/Workshops/Induction level/training Orientation Programmes and provision of regular professional meeting/discussion during the academic session.

The perspective plan should highlight the existing status of elementary Teacher Education system in the concerned State/ district and should indicate how to improve the status in a phase planned and time-bound manner. The formaulation of perspective plan would include:

7.3.1 Action plans to liquidate the backlog of untrained teachers

7.3.2 Formulaticn of modalities to met the in-service training need of elementary teachers (including Headmaster), AE and NFE personnel etc. and the sharing of responsibilities between DIET and other institutions.

7.3.3 Translation of perspective plan into annual calender of programmes to be held at DIET and outside DIET

8. **Organisation of Inservice Education Programmes:**

8.1 **Development of 'Main' Programmes:**
'Main' programme would be the focus of in-service activity. Each DIET is to develop its own set of main programme for

different target groups i.e. main programme for primary teachers, main programmes for upper primary teachers, main programmes for headmasters etc. based on the guide lines provided. These main programmes are to be formulated keeping in view the in-servicing training needs of the concerned target group of the district. These main programmes would have a common core based on common thrust and perspectives and other components would.be designed to meet the specific need of the target group of individual district.

8.2 Development of Theme specific programmes.

8.3 Development of Training programme for resource persons involved in main programmes designed for various target groups and theme specific programmes as outlined above.

8.4 Development of designs of distance/distance-cum-contact modes of inservice training programmes.

8.5 Development of organisational design of District level study centre.

8.6 Development of tools for evaluation of the programme.

8.7 Development of strategy for monitoring and follow-up of the programme.

9. <u>Programme Transactional Methodology:</u>

The focus of course transaction methodology should be:

9.1 Lecture cum-discussion - minimum lecture.

9.2 Emphasis on participatory group discussion.

9.3 Emphasis on trainee-active/participative approach.

9.4 Investigation.

9.5 Case Studies

9.6 Self-Study

9.7 Demonstration-cum-Discussion

9.8 Practicals

9.9 Field visits

9.10 Project work

9.11 Problem solving

9.12 Sharing of experiences

9.13 Transcatin of inservice messages through audio-visual modes like video and audio-cassette, telecast/broadcast, films, slides, transperiences.

9.14 Emphasis on discovery, learning and practice by trainees.

9.15 Identification of practical problems faced in the field.

10. Duration-Time Scheduling:

Time schedule for in-service programme may be formulated on the basis of local situations. However, various options are:

10.1 During vacation

10.2 During holidays.

10.3 Evening

10.4 After the school hour training in the contact mode may take the following form:

10.5 Comprehensive training course for preferably 3 to 5 weeks.

10.6 Medium Term Training Course/Workshop/Induction level trainin, Orientation Programme/Symposia for minimum two weeks.

10.7 Regular professional meeting/discussion during the academic session at school complex/DIET/Teacher Centre where the teacher can receive inservice message through discussion with resource faculty, audiovisual aids, sharing of experience, demonstration etc.

11. Resource Faculty:

The resource faculty may include:

11.1 DEET faculty members.

11.2 Training College faculty members.

11.3 SCERT faculty members

11.4 Sr. Principals/Headmasters of H.S./Secondary Schools.

11.5 Reputed teachers/National awardee/State awardee teachers.

11.6 Inspector of Schools/DEO's/ Deputy Inspector of Schools.

12. Evaluation of Inservice Programme:

12.1 The evaluation of In-service programme may be of two types: participnt evaluation and Faculty Evaluation.

12.2 Evaluation may be done at the end of each module by giving an exercise, short problems or test to the participants. At the end of the programme the evaluation could also be done.

12.3 Evaluation caild also be done at subsequent timepoint. The purpose of evaluation is diagnostic and remedial by nature.

12.4 Evaluation of Inservice Programmes should focus on.

    12.4.1 Realisation of objectives

    12.4.2 Course design

    12.4.3 Course Transactional Methodology

    12.4.4 Adequacy of organisational strategies

    12.4.5 Effectiveness of Programme Inputs

    12.4.6 Prepeption of Course Directors Resource Faculty and Teachers in regard to Organisational strategies, effectiveness of programme inputs, and transactional methodologies.

    12.4.7 Degree of awareness generated with target graip.

    12.4.8 Visualisation of new roles by the target group.

    12.4.9 Attitudival change generated in the target group after training (if evaluated at subsequent time point.

    12.4.10 Competency acquired by the target group in transfering training input.(if evaluated at subsequent timepoints)

Information check list cum rating scale could be potential tools for evaluating the effectiveness of various aspects of the programme. Degrees of awareness generated and the degree of visualisation of new roles by the target group may be evaluated by multiple choice type of items.

Now certain problems are presented before you. You may feel free to suggest solutions.

Problem-1   Is it possible to provide time for inservice education by the teachers within normal routine working hours without putting undue load to teachers? ·

Suggest solutions:
1.
2.
3.
4.

Problem-2   In existing in-service programme for the teachers knowledge in the content area, teaching methods and teaching ski are treated separately. But in actual practice these three eleme work in integration. Is it possible to design training material integrating these three elements?

Suggest solutions:
1.
2.
3.
4.

Problem-3   Existing inservice programmes ignore the problem of real school situation. In-service Education Programme should fit the real school conditions. The inservice programmes should be tailored to the situational context.

Suggest solution:
1.
2.
3.
4.

Problem-4   Even when the in-service training has been design to suit the requirements of the school situation, teachers in th school will progress at different rates and master the training objectives in different ways. How then, training could

accomodate teacher individually?

　　Suggest solutions:

　　　　　　.1.
　　　　　　2.
　　　　　　3.
　　　　　　4.

Problem-5　　Individual teacher, Teacher Associations, School
Administration - all would try to determine the objectives of
inservice education best suited to them and control the management
of the programme. How to strike out a compromise?

　　Suggest solution:

　　　　　　1.
　　　　　　2.
　　　　　　3.
　　　　　　4.

Problem-6　　A number of target groups have been specified
for training under IFIC Branch of DIET. List out the priority
target groups:

　　　　　　1.
　　　　　　2.
　　　　　　3.
　　　　　　4.

Problem-7　　A number of Delivery system Modalities have been
suggested. Please list out five modalities in order of importance
suited to infrastructural financial contraints of DIET to which
you belong.

　　　　　　1.
　　　　　　2.
　　　　　　3.
　　　　　　4.
　　　　　　5.

<u>Problem-8</u>   List out appropriate programme transctional methodologies suited to your DIET/Local conditions in order of importance/preference.

        1.
        2.
        3.
        4.
        5.
        6.
        7.
        8.

Module No. 4.

EVALUATION OF INSERVICE PROGRAMMES

Dr. P. Das

The present system of evaluation does not adequately reflect the total growth/progress of the students or effectiveness of teaching. From the existing practices and from our long term experiences, it is not difficult to pin-point some of the major shortcomings which need to be properly appreciated and accepted before taking up any plan of evaluation improvement. In a summerised way we can list these. as under.

1. Concept of evaluation is restricted to examination rather than a broad comprehensive concept of evaluation.

2. Evaluation is considered as end of the course/session rather than as an integral part of teaching-learning process.

3. Evaluation is considered as an act of measurement of students' learning rather than a means for improvement of their learning.

4. Evaluation activities are limited to scholastic aspect rather than total growth of the child.

5. Use of tools & techniques is limited to written examinations largely.

6. Quality of written examinations is questionable from the point of view of validity and reliability.

7. Diagnostic evaluation is still a dream of the future.

8. Using evaluation as a feedback has yet to become a reality for improving students' learning.

9. Evaluation is never conceptualised as objective
   based, continuous, cooperative and dynamic process.

You may add many more glaring shortcomings of the
existing system of evaluation. What is really worth stating
is the cause of all these ills. The cause may lie with
the teachers or the educational system in general.
Therefore, there is an imperative need to make evaluation
an integral part of the total teaching-learning process
and to make testing continuous and comprehensive by taking
care of all the three domains (Cognitive, affective and
psychomoter) for all round development of the learner in
both schola stic and non-scholastic areas.

OBJECTIVES:

   After studying this module, you should be able to:

- Understand the concept of evaluation as a quality
  control of educational programmes.
- Know purposes of evaluation
- Identify criteria of good evaluation
- develop suitable planning and implementation
  modalities of evaluation.
- prepare a comprehensive scheme of evaluation
- design a follow-up ac tion in order to make
  evaluation more functional and meaningful.

Concept of Evaluation

   The concept of evaluation should not be equated
with the concept of examination or mere measurement.
Broadly defined, educational evaluation is the quantitative
and qualitative estimation of the overall growth and
progress of pupils towards objectives or values in the
curriculum. The emphasis in evaluation is upon broad

personality changes and major objectives of an educational programme. These include not only scholastic achievements, but also non-scholastic areas like attitudes, interests, ideals, ways of thinking, health, work habits, personal and social adaptability. Hence evaluation is integrally related to the teaching-learning process. It entails a value judgement and works as a quality control in educational programmes.

Activity - 1:

Develop your own concept of evaluation and differentiate it from examination.

Purposes of Evaluation:

Mainly evaluation helps in:

a)   determining the effectiveness of courses and programmes.

b)   testing assumptions about instructional practices .

c)   selecting, clarifying and appraising objectives.

d)   creating motivation.

e)   serving as a feed back for both teachers and students for effective teaching and learning respectively.

f)   discsriminating and ranking the students.

g) diagnosing pupils weakness/learning difficulties.

h)   providing basis for guidance and counselling.

Activity - 2:

List few more purposes of evaluation which
you feel as necessary and important.

Criteria of Good Evaluation

The criteria of good evaluation emerge naturally
from the basic assumptions about evaluation. They can be
enumerated as follows:

a) **Evaluation should be objective based**

The evaluator should define or spellout clearly
the set of objectives to be evaluated. The objectives
may be knowledge, understanding, application, skills,
attitudes, interests health, work habits, persona &
social adjustment etc.

b) **Evaluation should be a comprehensive process.**

Evaluation should cover both scholastic and
non-scholastic dimensions of pupils' growth and use
variety of appropriate tools and techniques of evaluation.

c) **Evaluation should be a continual process.**

Since evaluation aims at estimating overall growth
of the child and basically growth is a continuous
phenomena, it is imperative to make evaluation regular
and continuous.

d) **Evaluation should be a dynamic process.**

The approach of evaluation should not be rigid,
static in nature. It should be flexible and dynamic in
respect of frequency of examinations, type of
examinations etc.

e) Evaluation should be a cooperative process.

 Since the emphasis of evaluation is on all aspects of pupils progress, a single teacher is not competent to do the justice for evaluating all the dimensions of pupils growth and hence the cooperation of all teachers, students, and parents is essential.

Activity - 3:

 Write down the specific procedures that you can adopt to make your evaluation continuous and comprehensive.

Planning and Implementation Modalities of Evaluation:

 The following steps are suggested about the modalities of school evaluation.

a) Determine the areas (both from scholastic and non-scholastic) and identify the appropriate objectives under each area to be evaluated.

b) Selecting/preparing tools and techniques of evaluation. (Tools may include achievement test, diagnostic test, psychological tests, checklist, rating scale, records, and techniques may be inform of written, oral and practical examination).

c) Determining the periodicity of evaluation.
 In order to make evaluation continuous, periodicity of evaluation both in scholastic and non-scholastic area should be decided much in advance.

d) Executing the Plan
 Collecting of informations or evidences may be done by using the tools and techniques already decided above.

e) <u>Recording</u> the results.

Progress report cards both in scholastic and non-scholastic areas should be developed in order to record the results.

f) <u>Using</u> the results for instructional decisions.

The results of the evaluation may be effectively used for improving classroom instructions.

<u>Activity - 4:</u>

1. Identify three objectives from non academic areas which need to be evaluated at the secondary level.

2. Prepare progress report cards both for scholastic and non-scholastic areas for secondary school child.

<u>Scheme for comprehensive evaluation</u>

The scheme of comprehensive evaluation may include the following aspects of pupils' growth and activities.

<u>Scholastic Aspect</u>

<u>Area</u>	<u>Periodicity</u>	<u>Tools & Techniques</u>
Curricular areas	Five times in a year	- Written examination
		- Oral examination
		- Practical examinatio
		- Achievement Test
		- Diagnostic Test
<u>Intelligence</u>	Once at the beginning of the Primary/Middle/ Secondary stage.	- Intelligence Test

Non-Scholastic Aspects

Personal and Social
      Qualities

- Regularity   Once in a year   - Observation
- Punctuality   - Anecdotal Record
- Discipline   - Rating Scale
- Habit of cleanliness
- Emotional Stability
- Initiative
- Sense of responsibility
- Industry
- Spirit of Social Service
- Any other

Interests

- Literary   Once in a year   - Observation
- Scientific   - Rating Scale
- Musical   - Anecdotal Records
- Artistic
- Social Service
- Any other

Attitudes

- Towards Teachers   Once in a year   - Observation
- Towards studies   - Questionnaire
- Towards school-mates   - Interview
- Towards school   - Rating Scale
- Any other   - Anecdotal records

Physical Health

- Height   Twice in a year   - Observation
- Weight   - Interview
- Chest   - Medical Check up
- Physical defects, if any

Activities

Literary and Scientific activities

- Library	Once in a year	- Observation
- Debate		- Anecdotal Record
- Recitation		- Rating Scale
- Creative Writing		
- Science Club		
- Any other		

Cultural Activites

- Drama	Once in a year	- Observation
- Music		- Anecdotal Record
- Dance		- Rating Scale
- Drawing & Painting		-
- Any other		

Out Door activities

- Games	Once in a year	- Observation
- Sports		- Anecdotal record
- Scouting		- Rating Scale
- N.C.C.		
- First Aid		
- Gardening		

Activity - 5:

Keeping in view your school conditions, prepare the scheme of comprehensive evaluation in non-scholastic and activity areas.

Follow-up action:

The above guidelines attempt to indicate major directions in which the programme of evaluation deserves to move so as to realise the purpose of education. Orientation of teachers towards the new directions of continuous and

comprehensive evaluation will not improve the system
unless teachers tries to implement the scheme with
sincerity and honesty.

The following follow-up ac.tion plan is suggested.

1. Organisation of Orientation Programmes for teachers
   about the new directions of evaluation.

2. Keeping in view the school conditions, the scheme of
   evaluation may be defined and implemented on
   cooperative basis.

3. There should be regular supervision of the school
   evaluation programme and assistance may be provided
   to the teachers when they face any operational problems.

4. Format of Progress cards may be developed and may be
   supplied to all schools for uniform record of results.

5. Ac tion research relating to various aspects of
   evaluation may be undertaken the findings of which
   will be taken as feed back for improving evaluation
   system.

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Module No. 5.

INSTITUTIONAL PLANNING

Dr. Saroj Pandey

Introduction

This module aims at developing in DIET personnel an insight into various aspects of institutional planning and enhancing their ability to undertake various problems of their institutions, and solve it at the institutional level utilizing institutional resources.

You are aware that educational planning has been going on in our country since independence, yet it has not yielded the desired result. We are yet to achieve the basic constitutional promise of providing free and compulsory education to each and every child upto the age of 14 years. Drop out rate among school going children is alarming, wastage and stagnation is high and most of the girls are out of school. Education is always being criticised as irrelevant to the needs of society.

India is a country with vast regional disparities and diversities. The needs and requirements of a school situated in remote interior of eastern region may entirely be different from a school in the southern or western part of the country. Even in the same region people have different habits, needs and priorities. Our planning system is highly centralized in the sense that all plans are prepared by the centre and implemented by the states. It has been mainly an inverted pyramid-everything trickling from top to bottom. The individual teacher and institution has completely been forgotten in this process. The needs of individual insituation is that which is felt by the planners and not by its teachers or principal or students, parents and local community. They have no say in the process of planning. Principal and teachers are their only to 'accept' and 'implement' without knowing the 'why' and 'how' of the plan.

Hence decentralization of planning is essential for maximum utilization of existing resources and effective functioning of educational institution. Each and every institution should prepare its own plan on the needs felt by its principal, teachers and students, utilizing its own resources. Institutional planning will rherefore, make the whole educational planning in the country more realistic. It will give right direction to the educational planning in the country i.e. the upward direction - 'from bottom to top'. Institutional planning is, thus, a planning of the school, by the school and for the school.

Objectives

This module will set you thinking about institutional planning. After completion of this module you will be able to -

1) Precisely define the concept of institutional planning.
2) Realise the improtance of institutional planning.
3) Identify the needs of institution and problems faced.
4) Identify some institutional needs and determine the priorities among different needs.
5) Assess the available resources and constraints.
6) Formulate project for institutional development.
7) Understand the steps involved in institutional planning.
8) Evaluate the progress of institutional plan.
9) Utilize the feedback from a institutional plan for formulating a new plan, or revising the same plan.

Concept of Institutional Plan

By now you must have developed the idea that institutional planning is democratic decentralization in the field of educational planning in the true sense. School is an

unique human institution. It exists to achieve certain aims
and ideas of the community. Each school has its own specific
aims and objectives, its own priorities and needs, and its
own specific way of solving its problem. It is a systematic
approach to prepare comprehensive plans for educational
development at the institutional level. The concept of
institutional plan envisages a programme of development and
improvement by an educational institution on the basis of its
felt needs and resources available or likely to be available
with a view to improving the school programme and school
practices. The plan may be of a longer or shorter duration.

Thus the institution has to identify its own problems,
determine its own priority of needs and find out its own
solution by utilising available local resources.

Institutional planning is a cooperative effort of all
the participants of school organization - the principal,
teachers, students, parents and local community.

Activity Sheet No.1

1. Define the concept of Institutional planning.   Collect
2. Discuss the need of institutional planning.   Collate
3. Write a few sentence about the advantage of decentralized planning over centralised plan.   Discuss

Objective of Institutional Plan

An institutional plan specifically aims at :

1) Qualitative improvement of the school
   organisation.

2) Reduction of·the incidence of wastage and stagnation, drop-out among school children, faculty improvement, general administration, school building and equipment etc.

3) To provide educational facilities for the growing population in different age-groups in the localities where institutions are located,

Requisities of Institutional Plan

'While making an institutional plan you should keep following points in mind :

1) The plan should be prepared on the needs of the school as indicated by school staff. .

2) It should utilized the resources available in the school and community to the maximum extent.

3) It has to be a cooperative venture of the community, management, school staff and the students.

4) It should be goal-oriented.

5) It should aim at school improvement as well as school development.

6) It should not be rigid rather it should be continuously developing.

7) It should result in improvement and motivation on the part of teachers, students, community and the management.

Activity No.2

1. Identify the needs and its priorities, of your institution.	Collect
2. Find out the objectives of any one of these institutional needs.	Collate
3. List the essential characteristics of institutional plan.	Discuss

Steps of Institutional Plan

The following steps are involved in institutional planning.

1) Survey the felt needs of school and resources available or likely to be available in the school. Institutional planning may be needed in one or more of the following areas.

    i) Student services;

   ii) Faculty improvement programmes;

  iii) Building and equipment;

   iv) Extension and other programmes;

    v) General administration; and

   vi) Financial management.

2) Determine the priority of needs and work out alternative choices in the light of assessed resources and future needs.

3) Formulate and prepare the plan.

4) Execute the plan within resources and with maximum of efforts.

5) Evaluate the plan for improvement.

Activity No.3

Give a list of steps necessary for institutional plan keeping in view the need of your institution identified by you earlier.	Collect Collate Discuss

Process of Institutional Planning

By now you have got the idea that institutional plan is a cooperative effort of the principal, teachers, students, parents and the local community. The needs should by identified by all and available local resources should be utilized to achieve the plan objectives. Now the question

is how to make the actual plan ? How to formulate a project
on felt need of institutions ? There are three stages in the
process of preparing an institutional plan :

a) Normative stage : It involves determining what
should be done i.e.
  i) Establishment of aims and
     objectives.

b) Strategic stage : It involves what can be done i.e.
  ii) Identification of needs and
      problems.
 iii) Assessment of resources.
  iv) Determination of priorities.
   v) Formulation of plan.
  vi) Finalization of plan.

c) Operational stage : It involves actual implementation.
of plan i.e.
 vii) Work plan for implementation.
viii) Monitoring and evaluation
      of plan.
  ix) Revision of plan.

<u>Activity No.4</u>

Suppose you want to over come the problem	Collect
of drop out in your school prepare a list	Collate
of activities and programmes you would	Discuss
initiate in order of priority.	

Revision or evaluation of the plan is very important.
It should be a continuous process and plan can be modified
accordingly. The experiences gained from one plan may be
utilized as feedback into planning at a later stage.
Evaluation should be done by the school authorities themselves,
but sometimes evaluation of external authority way also be
required.

Activity No.5

After completion of the module answer following questions as recaptualation exercise :

1) What is an institutional plan ?

2) What steps should we take to prepare an institutional plan ?

3) What are the characteristics and advantages of institutional planning ? Illustrate with suitable examples.

4) Make an institutional plan for your institution.

b/s

ModuleNo. 6.

THE SCHOOL COMPLEX

Dr. A.D.Tewari

Overview:

The school complex aims to integrate the neighbouring primary schools to a centrally located middle school, and the middle schools to a nuclear secondary school so that the schools of a geographical area may function as a whole drawing on each others resources and planning their development with minimum of external control and support. The scheme was formulated and put forward in a systematic manner by the Education Commission (1964-66), to improve planning and management of school education at local level for raising the quality of education in that area. The concept is now being revitalized by developing new strategies and guidelines for its effective implimentation. In accordance with the National Policy on Education 1986 (para 107), its Programme of Action (1986,p.203) clearly mentions that:

"School complexes will be promoted on a flexible
pattern so as to serve as networks of institutions
and synernic alliances to encourage professionalism
among teachers, to ensure observance of norms of
conduct and to enable the sharing of experiences
and facilities".

This module is an effort to detail the concept of school complex to school teachers.

Objectives:

After going through this module you should be able to:

i) understand the concept of school complex.

ii) appreciate the concept of school complex and the rationale behind it.

iii) participate effectively in the functioning of school complex.

iv) realise changed roles and responsibilities of a teacher in a school complex.

v) contribute positively for the success of school complex.

vi) suggest alternatives in cooperation with your colleaques within the school complex for improving the teaching-learning process.

vii) forsee the decentralisation of educational planning and administratin at grassroot level for improving the quality of education.

viii) anticipate the problems which might arise in .implimentation of the school complex concept in your region and suggest wayouts to resolve these problems.

ix) appreciate and utilize facilities, services and support that could be made available for the participating schools from other schools in the school complex.

Background:

The Article 45 of the Directive Principles of Indian Constitution refers free and compulsory education to all children in the age group of six to fourteen years. So, immediately after the independence of the Country all round efforts were made at all levels to develop necessary infrastructure of formal education inorder to fulfil the constitutional obligation. As a result of which, resources were mobilised to develop network of a large number of schools throughout the country and teachers were appointed to provide easy access of education to more and more children. Later, these efforts put challenges in terms of planning, management, organisation, administration and inspection of such a large number of schools on the one hand and in terms of the problems of wastage and stagnation (dropouts), poor quality of education, single-teacher schools, schools without minimum essential facilities, isolation between institutions and between schools and community, less or no

participation of teachers in policy making and decision making
process improperly equipped school-classes or non-availability of
instructional materials to schools and the like, on the other hand.
These challanges of managing education well called for a variety
of innovative ways and means to overcome them. The concept of
school complex emerged as a result of such an innovative practice.

The Education Commission (1964-66) and The School Complex:

The idea of school complex mooted by the Education
Commission (1964-66) was not an entirely new concept. During
pre-independence period too, in the princely state of Ajmer and
in some part of erstwhile province of Bombay, neighbouring schools
were linked with the middle school to form a 'cluster'. However,
this concept was put forward in a systematic manner by the
Education Commission (1964-66) to provide a resolve for some of
the serious problems Indian education was facing. While studying
the status of various types of schools, the Commission record
that, at the beginning of the Forth-Five Year Plan there were
about 4000 secondary, 65000 higher primary and 3,60,000 lower
primary schools located in the rural areas. The Commission
discovered that these schools can be clustered in a meaningful way.
In a radius of 5-10 miles there is one secondary school, about
five higher primary schools and about 28 lower primary schools.
It struck to the Commission that the cluster of these schools
could be taken as ".....a fairly small and managable group which
can function in a face-to-face relationship within easily accessible
distance. It has also a good potential for planning and guidance
since there will be at least five or six trained graduates in the
school- this group built around a secondary school be adopted
as a minimum viable unit of educational reform and develop
accordingly"(p.43). The clustering of higher and lower primary

schools around the nucleus of a secondary school can be attempted
in a two tier system. In the first tier, eight to ten lower
primary schools can be integrally related to a higher primary
school on the basis of physical proximity. The headmaster of
the higher primary school should provide extensive services to the
component lower primary schools in his charge and he should see
that these lower primary schools function properly. For this
purpose, he should organise a committee under his chairmanship
consisting of the headmasters of all the component lower primary
schools in his charge. The committee should be entrusted with the
task of planning and development of all component schools as a
part of the "single complex". The committee should also provide
guidance and supervision for day to day activities. The second
tier can involve clustering of higher primary schools around the
nucleus of a secondary school. A committee consisting of all the
headmasters of the higher and lower primary schools under the
chairmanship of the headmaster of the secondary school should be
setup. This committee should be responsible for functioning and
development of all the schools in the school complex. The head-
master of the secondary school should be the overall incharge of
the school complex. The school complex committee should plan the
work to formulate academic calender and give guidance all the
school in the area.

The Commission viewed that "this group of schools and
teachers can be given a good deal of freedom to develop their
own programmes subject to general guidance of the inspecting staff.
It should also be requested to coordinate its work with the local
communities and to derive as much help from this source as
possible". The commission felt that the school complex as a unit
can break the terrible isolation in which each school functions
at present. It would encourage cooperative efforts among the
schools, help them develop own identity, facilitate maximum
utilization of resources and a number of other positive things.

An important aspect of the scheme was to decrese the
load of inspection of the inspecting authorities to visit the

schools under their juridiction in order to provide adequate
inspection. The Commission visualised that "the complex itself
will perform certain delegated tasks which would otherwise have
been performed by the inspecting officers of the Department and
dealt with individual schools within it. Under this programme,
the school will gain its strength and will be able to exercise
greater freedom and help in making the system more elastic and
dynamic. The Department will also gain. It will be able to concen-
trate its attention on major essentials and can afford to have
fewer efforts but at a higher level of Competence"(p.263).

In order to give impetus to the concept of school
complex the Commission further suggested that:

1.　　　　The school complex may be used for more effective and
standardised methods of evaluation of students and
their promotion from classes to classes.

2.　　　　It can be used for maximum utilization of certain faci-
lities and equipments which can not be provided separately
to each school.

3.　　　　The inservice education of teachers in general and
upgrading of less qualified teachers in particular may
be an important responsibility of schools. Specifically
designed trained programmes, film shows, demonstration
lessons and other academic activities can be organised
at the various schools of the complex.

4.　　　　The complex committee may encourage each school to plan
its own work in sufficient detail for the ensuing
academic year. The headmasters of the school can
bring their plans to the complex committee, discuss them
in detail and decide on the broad principle of development
in the light of which each individual school can plan
its own programme.

5.　　　　The school complex can maintain reserve teachers who
can be sent to the component schools when the need
. arises.

6.   The school complex can formulate a plan for evaluating the new textbooks, teachers guide, teaching aids and other materials keeping the specific need of the community in mind.

7.   The school complex may make innovative changes in the prescribed curricula and syllabi to be used in the its complex.

The Commission was quite cautions in suggesting the introduction of school complex on a large scale. It suggested two precautions which must be taken and which may infact be the crucial determinants of success of school complex. First of all, careful preparation for the introduction of the scheme and the orientation of teachers are necessary. Secondly not all powers should be conferred upon each school complex simultaneously.

It was in persuance of the recommendations of the Commission and the Education Policy Resolution (1968) some states such as Bihar, Gujrat, Harayana, Kerala, Madhya Pradesh, Maharastra, Nagaland, Orissa, Punjab and Utter Pradesh set up school complexes on an experimental basis. But for one reason or the other the scheme of school complex could not takeoff well also as to reach even evaluation stage in most of these states. However, the evaluation reports of the school complex scheme in Kerala, Bihar and few other states reflect a ray of hope for improvement in school education with the help of the scheme of school complex. (for detailed and indepth reference kindly consult reports given in the 'REFERENCES' at the end).

National Education Policy-1986 and the School Complex:-

Keeping in view the possibilities and potentialities in the scheme and the feedback received from the findings of various evaluation reports of experimental school complex projects initiated in various states, the scheme of school complex is now being revitalized for the purpose of the overhauling of the system of planning and management of education. It is bound to gain momentum by developing new strategies and guidelines

for its effective implimentation with the initiation of a
nationwide debate on reformulation of a viable and effective
education system through the document "Challange of Education
- a Policy Perspective (1985), and the National Policy of Educatio
(1986) and its programme of Action (1986) reiterated that, (the
school complex) will serve as the lowest viable unit of area
planning and will form a cluster of institution in which
different institutions can reinforce each other by exchanging
resources, personnel, material teaching aid, etc. and using
them on sharing basis".

It was further suggested that the establishment of
school complex will be of two types. In the first type, each
middle school will be related to three to five primary schools
that exist in its neighbourhood. In the second, eight to ten
primary and middle schools in the area will be linked with the
secondary/higher secondary school. However a flexible approach
will need to be adopted in sparsely populated, hilly and desert
areas, where the number of schools in a complex will be much
smaller compared to the number of plain areas. In densely
populated areas too, the number of schools in a complex will be
slightly smaller than the average size of the school complex.
Special emphasis will be put on flexibility in the organisational
design of school complex. Special emphasis will be put on
flexibility in the organisational design of school complex
while selecting a leal school. The following criteria need to be
born in mind:

1.   The number of feeder schools in the area including
        nonformal centres/or out of the school children and
        adult walking distance between the lead school and
        nonformal education centres which will be normally
        five to eight kilometers.

2.   Adequacy of inputs in terms of staff, building,
        furniture etc.

3.   Academic standards.

4.   A lead school will normally be a school of at least
     five years standing. As a part of the flexible approach
     the lead school can be in some place at primary level
     and in others at middle and secondary level.

Some Suggestions for Teachers:

        Finally, following are some important points relevant
to school teachers who will form the backbone of the synerhic
alliance within the school complex.

1.   A school complex will be able to solve the day to
     day problems of individual school teachers.

2.   It will be able to make teaching effective by
     facilitating the exchange of ideas among teachers
     and schools at different levels, by developing
     synernic feeling and sharing academic and other
     resources like enrichment materials etc.

3.   It will encourage teachers' meetings, workshops,
     demonstration lessons film shows and seminars to
     raise the quality of education.

4.   It will become possible to arrange exhibition on
     Science, SUPW etc. in schools with best equipped
     within the school complex.

5.   Teachers from schools will be able to pay visits
     to secondary, upper and lower primary schools as often
     as possible to share experiences or providing
     guidance and support.

6.   It will help in evolving academic leadership in
     teachers and sharing of experiments and innovation
     in the teaching learning process at local level.

7.   Provision of inservice education for subject teachers
     will be arranged at DIET but the school complex will
     will help in the general orientation of teachers on
     subjects like value orientation, national integration
     etc.

8.   It will be able to arrange for teachers from one school of the complex to go to another in case of short leave. This will be made by the headmaster of the lead school on temporary basis for a short duration only. Heads of the participating schools may also evolve their own division of responsibility on such matters.

9.   If a teacher is transferred or setout on training, the information will be sent by the District Education Officer to the heads of school complexes concerned.

10.   It will be able to reduce the travelling distance for teachers on many counts through decentralization of certain relevant powers to lead and school headmasters or other heads.

11.   It will be able to shortout administrative issues like problems of leave reserve, delay sanctions etc. at the monthly meeting of teachers with headmasters of concerned schools in which state Education Department and District Education Officer may become available.

12.   It will enable teacher to assist the heads in conducting examination.

13.   It will facilitate the formation of the norms of greter punctuality, regul rity of teachers, their greater invovement in teaching and an improved academic climate.

Exercises:

Activity-I : Prepare a detailed plan of a school complex which you would like to suggest for your region/area.

Activity-II: Suppose you are the chairman of school complex committee. Enumerate problems you might be facing in organising the school complex activities. Suggest means and methods you would be using to resolve them.

Activity III. Prepenwe three days/five days Orientation Programme/Training Programme for organisation of a School Complex for participating teachers/headmasters of primary and senior primar school,

Activity-IV: Prepare an action plan for academic cooperation between primay, middle and secondary schools within the fame work of school complex to raise the quality of education of your area.

Activity-V: Prepare a plan for organising inter school/ inter complex competition on (a) sports, (b) cultural activity, (c) exhibition-science/SUPW, (d) literary.

Activity-VI: As an incharge of subject matter committee how would you like to proceed for incorporation of certain changes in the curriculum, instructional methods, use of instructional materials for quality in provement in education of your schbol complex.

Activity-VII: How would you plan to ensure active participation of community in activities of your school complex.

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DEVELOPMENT OF LOW COST/NO-COST IMPROVISED TEACHING AIDS

Prof.(Dr.) K.S. Rao

Overview:

We are living in an era of communication technology
and to talk of low cost and inexpensive teaching aids for
classrooms is ironical. In our country 80 percent of the
population live in villages and the schools located in these
villages do not have even the minimum facilities and funds
to purchase equipments needed for classroom instruction. If
the classroom teaching is to be meaningful, low-cost aids have
lot of relevance and utility. Even the so called devveloped
countries stress the need for use of inexpensive teaching
aids made out of cheap and common, materials and to share the
experiences on the development of low cost education materials,
so essential in any country. It is essential that teachers
should know how to prepare, or procure, use and evaluate low
cost aids so that their classroom interaction is more
meaningful and effective.

A young child learns more when he is actively involved
in the learning process. Children take keen interest in play
materials and are inquisitive to learn about the materials
they see and observe in their immediate environment. Suppose
a child picks up a toy, he touches it, looks at it, moves
it and plays with it. Through their spontaneous activity,
children get their first understanding of the environment in
the preparation of inexpensive study or teaching materials
with their own hands add up to a necessary foundation on
which the child's development and achievement is built.

This module attempts to present a list of waste
materials available and the teaching aids that can be made
out of them.

Objectives:

After completion of this module, you will be able to:

1) identify the available materials in the local environment for preparation of simple aids;

2) devise ways and means to procure the teaching aids for class teaching;

3) appreciate the value of improvised aids in education;

4) list the resources and materials for low cost aids;

5) plan the procedure for developing low cost teaching aids;

6) design a plan to involve pupils for preparation or collection of inexpensive teaching aids.

A. Terminology:

> How do you define improvised aid ?
> What is a low cost teaching aid ?

Improvised aid is a term which refers to aids prepared with simple materials, costing very little, by involving the children and the local artisans. Any device that substitutes the normal equipment or apparatus and serves to clarify a concept can be termed inprovised aid. For example you prepare a tin can steam engine with razor blades and a metal tube that serves the purpose to explan the principle of steam engine, we can say it is an improvised aid. A low-cost material is any material that can be readily available in the environment and does not cost much money. The concept of low cost teaching aid arised out of the use of locally available materials involving the local resources and technology. Thus the characteristics of low cost aids are :

1) it is made out of waste material, -
2) it is cheaply available,
3) it is replicable,
4) it is made by teachers, pupils and local artisans,
5) it does not involve any machine to operate and
6) it involves the interaction of the teacher with the school community.

B. Need for Low-cost Teaching Aids:

Let us examine the need for using the low cost aids. If you think lisurely, you may recall many situations in the day to day teaching where you might have felt the need for teaching aids to explain the abstract concepts or ideas in your subject matter. There is a saying that "One teaching aid is worth thousand words".

The National Science exhibitions organised annually by NCERT have proved to be a good way of motivating and encouraging children and teachers to produce low-cost education materials. At the state level similar type of activities are conducted by the State Institutes of Education, SCERTs and Educational Technology cells. By organising workshops and exhibitions at the district, state and regional levels, these institutions are promoting and encouraging the development of low-cost improvised teaching aids. Some commercial agencies are also producing cheap and inexpensive educational materials such as games, toys, models etc. As the school budget does not permit the schools to purchase any equipment whether low or high cost, there is an acute need to encourage resourceful teachers to improvise teaching aids from available local resources.

C. Importance of Low-cost Aids:

1) Economic importance: The preparation of low cost play materials and aids could contribute towards the school becoming self-sufficient.

2) Educational importance: For better understanding the coordination of hands and head is important. The coordination of hands and head and the over all confidence that pupils acquire by preparing some teaching aids may lead to develop some creative talents among pupils. Children experience the thrill and joy of having created something which gives them a sense of achievement.

3) Social importance: When Tiacher involves pupils in collection and preparation of low cost aids, the children develop love for manual work and labour. They work in a team and develop the spirit of coopration.

D. | Can you Identify the Low-cost Materials ? |

The low-cost or no-cost materials that you come across in the local environment are wood pieces, packing cases, stones, fused bults, wires, seeds, grains, match boxes, cotton waste card board, playwood, tin sheets, powder tins, bottles, marble, clay and coconut sheels. The above list is not exhaustive and can include a host of other waster materials that are normally available in the rural or urban environment. Low cost aids include visual charts pictures, posters, models puppetts etc. prepared by the teacher and pupils.

Activity - 1:

Collect all the waste material that you can find in your immediate environment which you think can be used to devise low cost teaching aids. Note down the source from which they have been collected.

E. Categories of Waste Materials:

We can broadly categories the resources for low cost teaching aids according to the kind of source from which material is available in the nature:

1) Wood   : Scraps of boxes, wood pieces, bamboo
                   sticks, plywaste, tourch picks, cane.

2) Metals   : Tin, aluminium cans, metal caps, sheets,
                   iron wires, rods, bicycle spokes powder
                   tins etc.

3) Animal and Bones, feathers, skin, seeds, grains,
   vegetable   shells, fruits, coconut sheels, fibres,
   materials: tree bark etc.

4) Cellulose: Newspapers, corrugated sheets, card board,
              cotton, wool, masonite, sand paper, paper
              plates.

5) Earthen   Clay, cement, plaster, stones, marble.
   materials:

6) Other   Rubber tubing, sheets, plasticin,
   materials: plastics, glasspanes, bullbs, tubes etc.

Activity - 2:

Categorise the materials collected above in Activity 1.

Activity - 3:

Using the materials collected by you devise a small
teaching aid. Give brief out line of procedure and materials
used (indicating quantity).

Low-cost Teaching Aids:

1. Wood Materials:

Cloth clips dressed in crepe paper or cloth make
amusing dolls. They can be dressed up to whow the
costumes of different people or of familiar characters.
These figures can also be used as stick puppettes or
in shadow plays.

OR

Boxes:Two or more orange, apple crates nailed together and
      painted or papered make a working table for assembling

materials or show a demonstration. To preserve specimens or exhibits, two big boxes can be mailed sidewise. Cigar boxes, chalk boxes etc. are shaped as plates and can be used to paint pictures, alphabets, and numericals for language learning, story board and simple arithmetic. Small packing cases are used to prepare dioramas. Geometrical shapes, display boards, frames and holders for lenses can be made out of waste wooden boxes.

Schools: These are used as wheels and rollers for toys, dolls, etc. as pulleys and animals. Spools cut into half serce as knobs of doors, handles etc. Spools glued to a flat base can make a test tube holder or a pen stand.

2. Metals:

Metal ladles are used as candle holders and wall vases. Typewriter spools or film roll spools provide wheels for toy carts and dolls. Wiles, mails and bicycle spokes form a part of any toy making activity. Science models and improvised apparatus are made by using empty fruit juice cans, caps, and flexible metallic wires. Metal caps mailed to boards in patterned clusters make interesting display of numericals, alphabets musical instruments, holders etc. Jingle sticks are made from bottle caps by hammering the tops flat and nailing three or four of them loosely to a small wooden paddle.

3. Animal or Vegetable sources:

Bones and horns can be carved into shapes of various animals, trees, rings and school decorative articles. Fish scales can be used to a variety of pictorial uses. The scales can be coloured and pasted into hand drawn figures to depict different costumers. Fathers and shells are used to make animals, toys, and other decorative items. Seeds with cotton make nice dolls or different shapes of animals for teaching elementary level science.

4. Paper:

Corrugated paper and paper bags can be cut, shaped or
rolled into various animal and geometric shapes. Paper
bags stuffed with shredded cotton or paper make
interesting dolls. One can prepare a globe or paper
mache masks.

Activity - 4:

Soak overnight in warm water small bits of newspapers.
Pour off the excess water until the paper is nearly dry and
add one eighth part of liquid glue. The product can then be
moulded like moist clay to any shape one desires. When dry
it hardens and can take colours or paints. Paper plates can
be used for making puppetts, masks etc. Crepe paper is
largely used for making bags, table covers, figures, artificial
flowers, lampshades and a host of other materials, as it can
be stretched, pulled, twished, rolled into any kind of shape.
In the preparation of dioramas lamixated paper is of a great
halp as the basic material for scinic background and elevated
landscapes.

5. Clay Materials:

Soft mud, clay, clinkers, and rocks find enormous use
as aquariums or vivariums. Clay is used for making
dolls, figures, puppettes, fruits, vegetables, landscapes
of dioramas. Plaster of paris, wood cement and other
adhesives are used for carving of wall plaques, relief
maps and figures. The procedure to cast a mould, dry
it and lightly sketch the intended design on the surface.
Carve this design in relif by removing the parts of the
surface that are not in the pattern. Sand paper is used
to smoothen it and then painted with required colours.

6. Other Materials:

While preparing any low-cost material for teaching
purposes, no other makerial fixeds extensive use than

the broken pieces of glass, plastic sheets and rubber articles. These materials are required for joints, connectors, and acting as a base or separating walls. Ink and horlicks bottles with glass tubing serve the purpose of woulfe's bottle for carrying simple experiments in general science.

Thus by a little initiative and imagination one can convert any waste material available in the environment into useful and educationally worthwhile teaching aids. Some of the low cost aids that can be prepared by the teacher for classroom teaching, whether science or humantities are listed below :

Activity - 5:

> Suggest suitable activities for each of the following.

1) Primary colours
2) Optical illusion
3) Globes and relief maps
4) Dioramas
5) Geometric shapes
6) Hot and cold air currents
7) Newton's colour disc
8) Periscope
9) Persistence of vision
10) Air pressure, compressed air
11) Fire extinguishers
12) Simple printing machine
13) Language aids
14) Thumbtack models
15) Eclipses, Day and Night
16) Slide projector

17) Display boards
18) Steam engines
19) Time Clock
20) Grammar Clock
21) Pupetes and dolls
22) Archimedes Principle.

Sources of Information of Low-cost Teaching Aids:

The names and addresses of some institutions, doing pioneering work in this area are :

- Central Institute of Educational Technology,
  N.C.E.R.T., New Delhi.
- Vikram Sarabhai Community Science Centre,
  Ahmedabad (Gujrat).
- Kishore Bharati, Palia Piparia Village, Hoshangabad(M.P.)
- Social Work and Research Centre Tilonia, Ajmer(Rajasthan).
- Mitraniketan, Vellanad, Trivandrum Dist (Kerala).
- State Institute of Educational Research and Training
  Udaipur (Rajasthan).
- Neo Creative Educational Toys and Aids, Pondicherry.

Other Activities:

1) Prepare a Plan of action to develop 5 teaching aids and list the objectives, materials required, and the topic or subject for their use.

2) Identify the institutions and resource centres in your locality from where you can get help for developing low-cost aids.

3) Suggest ways of sharing the physical facilities and materials collected by you with other schools in the neighbourhood.

REFERENCES

1. N.C.E.R.T. - 'Inservice Teacher Education Package' for
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2. Laybourn & Bailey - 'Teaching Science to the Ordinary Pupil'.
3. Wittich and Schueller - 'Audio Visual Materials'.

b/s   ***

Module No. 8.

VALUE AND CULTURE EDUCATION

Sri G.S. Hati

During the last four decades, science and technology has progressed by leaps and bounds, on the other hand, there has been a decline of values in the society. At the individual or group lead, tolerance has given place to intolerance, love to hatred, peace to violence, respect to disrespect and kindness to cruelty. Corruption, flasehood and cheating have become the order of the day. The only purpose of living appears to be to achieve immediate gain of wealth or prestige by hook or crook. Man has become iresponsible both to himself and to the society. Good qualities are less valued or not valued at all. Hence the need of value education. This has been supported by all committees and commission at the national level in the past. It is indoubtedly the fact that the teachers have a significant role to play for inculcation of values in children at the school stage. However to make value education effective in schools, let us be clear in our minds about the what, why and how of it. This is the main purpose of this module.

Value and Education:

Values refer to objects that human beings cherish and desire, and consider desirable. We may value a thing or an abstract quality like truthfulness, peace etc. Education is the process of bringing about desirable changes of behaviour in the learner in the way he thinks, feels and acts in accordance with our concept of good life. Hence it is through education that one can preserve and develop values. Even it is proper to say that all education, in a sense, is value education.

Need for value education

Human personality has many diversions - like physical, intellectual, emotional, social, moral, psychic, spiritual etc. But for a variety of reasons the affective dimension of personality has been neglected and undermined.

Secondly the goals of secularism, socialism and democracy and professional ethics are coming under strain. There is decauturisation, dehumanisation and alienation. Forces of social and natural disintegration have become more active. Crime, violence and indifference to human sufferings have spread to all walks of life. Pollution of environment poses a serious threat to our quality of life. Narrow outlook in caste, language region, religion divides our people. Hence we need a drastic change in the very outlook of man, his values and his environment. This calls for a deliberate thrust on values in our education.

Sources of value education:

1. The regular school subjects of the school curriculum present themselves a potential resource of values. In other words good teaching of school subject cannot be neutral to the values that are integral to it.

Approaches to Value Education:

1. Values can be provided directly through specific periods in the school time table. Here values are discussed, explained, illustrated with stories, parables, role play, moral dilemmas and real life events.

2. Indirectly value education can be imparted through regular school subjects, co-curricular activities and school environment.

3.   Value education may be incidental when it is in relation
     to specific event or situation that actually occurred in
     the school or at home (e.g. an act of indiscipline which
     should be discarded and an act of courage which should be
     emulated)

     Each approach has its our strength and weakness. Hence a
judicious combination of different approaches both in and out-
side the school is desirable.

     i) While trying to develop values, the teacher must think
in advance the adverse effects of the experience outside the
school and take necessary precautionary measures :for the same.

1.   Value education should be related to child's psychological
     readiness and experiences.

2.   The rational understanding of values should be emphasiged
     as far as possible.   -

3.   All values can be taught at all levels but the approach
     to be followed and the activities to be provided will be
     different for different stages.

     The value education of a person should be related to the
social and cultural context in which he lives and with reference
to some universal and eternal standards applicable to all
man-kind.

     However the emphasis on values should differ at different
levels. For example at primary level some of the prominent
values to stress are attitude to help others, love for the
almighty, respect for elders, punctuality, regularity, truthful-
ness, not hunting others, honesty, Love for the motherland,
scientific temper, cleanliness and hygienic habits.

Process of value education.

1. It is a complicated process influenced by a variety of hereditary and environmental factors.

2. It is a lifelong quest as it involves knowledge of the value, faith in the value, choosing the right value and putting it into practice.

3. Dev. of values is influenced by home, school peer group, community and media.

4. School with cooperation of family can play a very important role in developing values.

5. Children acquire values though a developmental sequence.

6. We should not forget that 'If one knows what is right it does not necessarily mean that he will do what is right".

7. Development of particular value in a child may differ significantly from the development of another child.

Programme for value-oriented education in Primary Schools.

A good number of programmes may be organised in schools to develop different types of values in children. But a value discussed or practised once in a year is of no use to standards. To develop positive attitude for a particular value or to strengthen belief in a value which is a prerequisite for practice of values; there should be provision of environment to bring before the minds eye of the child at the regular intervals the personal and social benefits, success stories of the value and ways of practising the value through instruction, discussion be role play, debatem dramatics, group activities, film show, cultural programmes etc. Hence

one school should concentrate on some values although programmes may be arranged for many. This will also help-the child to counter act against the value conflict due to mass media, society and home, environment.

To be more specific, let us take the following values to be developed among children at the primary level.

1. Punctuality
2. Regularity
3. Cleanliness and hygienic habits
4. Respect for elders
5. Love for the nation
6. Love for the Almighty
7. Sharing
8. Attitude to help others
9. Scientific temper
10. Truthfulness
11. Honesty

So any activity that is arranged in the school should concentrate on these values and should spread uniformly over the whole year. Value oriented education can be given in three ways.

A) Direct, B) Indirect, C) Incidental.

A. Direct: This can be done in the followingways.

a) School assembly: Powerful sayings of great men or from scriptures may be brought or moral stories/significant events from the lifes of great men may be narrated on regular basis by students of different classes in the school assembly.

b, Value education Class:

Every class should have one period a week for direct value education class. If not, an interested teacher may inpart value education during arrangement periods. The following are some of the content and techniques to be followed in such classes.

i)   Silent Still sitting for about 2 minutes - The students will be asked to set silently closing their eyes. The teacher may announce the following.

Am I better disciplined than last week ?

Am I more regular in studies tan n last week ?

Am I talking less then them last week ?

Am I more attentive in the class them last week ?

ii)   Health and hygiene: General health like combing of hair, cleanliness of dress and nail etc. may be checked. One day one aspect of health like care of eye may be discussed especially its necessity, problems of eyes if they are not taken care of and how to take care of eyes.

v)   Group discussion: The teacher invites suggestions on topics like 'How can you help your parents at home' ? or 'How to maintain discipline in the school ? 'though group discussion. The summary may be written on the board after collecting points from each group.

vi)   Role play: 3-5 minutes playlets on some value may be enacted and then students may be asked to analyse each character to assess who has done right or who has done wrong for development power of moral judgement and positive attitude towards values. In the role play cited under cocurricular activities, the following questions may be asked role play.

1. Narrate the role play
2. (asking to each student enacted) - Why did you behave like this ?
3. (asking to the beggar) Whom did you love most and why ?
4. Students, which student did behave properly ?
5. What was wrong with the first boy ?
6. What was wrong will the second boy ?
7. Should you encourage begging for all ?
8. If not, why should you help this beggar ?

vii) Group activities:

Different types of group activities may be arranged to emphasise values. Value-oriented games are one of the important group activities for children. For example, similar to musical chair, some values and nonvalues may be written on pl cards and hung on the chairs. Values may be trhtufulness, shering, love etc. A student occupying the value chair will continue and students occupying nonvalue chairs bill be out. This game will be preceded by a discussion on these values and nonvalues so that students really enjoy when they play the game.

viii) Stories/parables/significant events of great men may be narrated to students.

The story should be short, educative and with few characters. If should be new and related to child's environment. It should be told in simple language with modulation of voice and body mevements when necessary. The understand in of students should be checked though frequent questioning. The story may be told with necessary attractive aids. The moral of the story and its application in daily life may be derived from students. The story try to discuss on one/two values.

ix) Group songs/prayers.

Group songs may be patriotic or on right conduct or other values. Prayers may be all religion secular. or stotras on morality/gods/goddesses. While choosing the songs and prayers/stotras one must take into account the composition and the tune which normally motivates the students. It should be short and easy for average students.

At first the song/prayer/stotra may be chanted/sung/ recited before students to draw their attention. The teacher may then write it neatly on the board (may use a chart) and read himself. Then students may be asked to read and then write in their notebooks. The teacher then clarifies the difficult meanings/concepts with illustration/stories. The teacher then swigs/recites and asks students to listen carefully. Students are then asked to follow line by line in chorus after the teacher sings/ricites. Then students are asked to sing/recites individually, Teachers and other good students help weak students to sing/recite. Finally the teacher suigs/ recites and students follow in chorus. The teacher may use teaching aids while teaching prayer/songs also.

x) Desirable change of attitude though questioning:

For example the teacher may ask the following questions to the class to develop positive attitude towards mother.

Q. Suppose you forgot to take tiffin to school on a day and your friend asked to share his tiffin with you. What will you do if your friend forgets to bring tiffin some day ?

Q. Why should you do so ?

Q. Who prepares food for you at home ?

Q. Who washes your clothes ?

Q. Who prepares bed for you at night ?

Q. Who is most worried when you ar late from school ?

Q. What other things does your mother do for you ?

Q. Is there anybody who helps you more than your mother ?

Q. Your friend offered you tiffin and you helped him
   But your mother is doing everything for you
   What can you do for your mother ?

xi)   Life history of greatmen, common features of major religions, diversities in culture of different parts of the country may also be narrated keeping in view the age group of students.

B) Indirect: Co-curricular/Extracurricular activities are activities which aim at the following:

   a) Give scope for children to manifest their varied skills and talents such as singing, speaking, acting organising etc.

   b) help in preparing children for good citizenship by practise of qualities like leadership, democracy co-operation etc.

   c) Sublimate the superabundant energy in a healthy way.

   d) Learn to value culture of our country.

   e) help in harmonious development of the child.

   f) act as a laboratory to partially practise values by children.

   g) Get chance to give spontanous expression to their emotion and casthetic value.

Module No. 9.
MINIMUM LEVELS OF LEARNING

.Dr. S.T.V.G. Acharyulu

Need for MLL at the Elementary
Stage of Education

This last decade of the 20th century has witnessed a growing need for laying down and ensuring acceptable minimum standards of achievement at the elementary stage of education. The concern is more with what the child actually learns at the primary stage of education. Primary education should provide relevant and rich experiences, knowledge, skills and values necessary for life in general and for continuing education in particular. Inrespective of sex, caste, creed, rural/urban locale, or SES background every child in the primary school should be made to acquire :

- functional and useful skills in literacy and numeracy.
- fundamental; functional, and comprehensive knowledge about the environment in which he lives.
- the capacity for creative thinking, problem-solving and application of what is learnt.
- values, attitudes, and behaviours conducive to development of character and self-discipline.

According every elementary school should ensure that every child irrespective of type of school, the geographic region to which he belongs, the language he speaks, and how poor or disadvantaged he is, acquires certain minimum level of learning that may be specified in different curricular subjects and at different stages. Such an achievement facilitates horizontal and vertical mobility of the learners, besides promising comparability of attainment among children studying in primary schools or non-formal centres across the country.

Why Minimum Levels of Learning ?

We have a sizable number of primary school students who show considerable deficits in the basic skills of reading, writing and airthmetic. Primary schools cannot disown their responsibility for the dicline in student achievement.

Children, right from the primary stage, should be made to grow up with the idea that they should struggle to excel others or to come on par with others of his age or class... They are to be encouraged to make efforts to learn and acquire the basic skills and knowledge in each subject so they can discover that learning can be interesting, rewarding, and exciting. In short, no learning taken place without effort and hard work commensurate with the child's ability. Without involvement in learning, teachers cannot expect their pupils to acquire the minimum skills, concepts, knowledge and abilities. After all it is pupils who must do the learning.

What is Meant by Minimum Level of Learning ?

A basic set of competencies are needed for every student undergoing elementary education in order to function effectively in life and to move on to higher stages of education if he so desires. The concept of minimum levels of learning refers to the minimum knowledge, skills, and abilities the student should acquire at any given stage of education. These MLL include both cognitive and non-cognitive aspects of development. The former are easier to conceptualise in definable, observable, attainable and measurable terms. The non-cognitive aspects are amenable to observation and qualitative description.

M.L.L. and Equality of Educational Opportunity

The concept of equality of educating opportunity implies that each student is given enough opportunities to grow to the limits of his ability irrespective of sex, race,

caste, religion or social class. Many students who have not understood even the basic fundamentals in the prescribed textual subjects matter are promoted under the non-detention policy in the primary schools. But the spirit of the poliwy is not that we do it mechanically to retain children in primary schools. Teachers have to understand that this policy has minimised the growing emphasis on preparing students for the end of the year examination. This gives enough scope for teachers to concentrate an each child's achievement in terms of the MLL and the objectives of the curriculum. Teachers must understand the fact that children have unequal mental ability and learn at different rates and pace. Instructional programmes should develop in each child the ability to read, to write clearly, to calculate, to think critically and logically, and to acquire knowledge of the world. The concept of MLL evolved as a result of such a realisation. The absence of minimum competency standards is responsible for most of the ills and problems of elementary education. As Rickover (1985) has "Quality education cannot flourish without generally accepted standards of academic performance"(P.156). What we need and desire most is good education for all children. All students undergoing elementary education should achieve a certain minimum level of learning.

How to Fix the Minimum Levels of Learning

It is necessary to lay down clearly what these minimum levels are, and then design assessment procedures to determine whether students have achieved them.

Curriculum for the elementary stage of education is designed by agencies such as the Central Board of Secondary Education at the National level and the Boards of Education/ SCERTs at the State level. These curricula are assumed to

H:G. Rickover(1985) "Competency based Education" in J.M.Rich (Ed.). "Innovations in Education

include the minimum levels of learning at the primary and
upper primary stages of education. On the basis of existing
curriculum, minimum learning levels may be defined at the
national level for primary (Class V) and upper primary
(Class VIII) stages. (All children studying in different
stages and Union Territories are to be helped to gradually
more towards achieving the National level MLL).

The curriculum for the elementary stage of education
differs from State to State and so it is desirable to follow
a decentralised approach in formulating MLL. At the State level,
MLL may be formulated for the two stages of elementary education.
It is possible that there may be differences between the
National and State level MLL. The idea is that every state
should gradually ensure that most children more achieving
towards the National level MLL. This would result in
comparability of standards of elementary education across
the country. The achievement levels of students within a State
may like-wise differ from district to district, and the
District Education Administration, DIETs, and Block level
Officers etc., have to render necessary support to the
primary schools so that their children more towards achieving
the MLL laid down at the State and National levels respectively.

NIEPA (1990) suggested that MLL may be laid down for
classes III, V and VIII. It is desirable to define not only
stage-wise but also class-wise minimum levels of learning.
The class-wise minimum levels of learning could be developed
by DIETs:SCERT by involving teachers working in elementary
schools, Inspectors of schools, and others associated with
elementary education. The DIETs have to develop necessary
tools for assessing existing achievement levels and monitoring
the progress of pupils towards State level and National level
MLL.

Minimum Levels of Learning and the Teacher

It is a happy augury that MLL are seen as an integral part of our national system of education. Whenever a skill or a textual lesson is taught it is done with the objective of making students acquire a reasonable mastery over it. It is possible for every teacher to formulate lesson-wise MLL on the basis of his knowledge of the attainment status of pupils. This can be done for each class and in each subject. Such an activity would enable the teacher to see whether his pupils are moving towards the District, State and National level MLL. It is possible that the lesson-wise MLL formulated by a teacher for a given class may differ from those determined by another teacher. Therefore, at the district level the DIETs in collaboration with other agencies within the State/District involve experienced subject specialists/teachers, curriculum experts, educational administrators and supervisors associated with primary education and formulate such MLL for use by teachers. It is important to note that the lesson-wise MLL are relevant, meaningful, attainable, observable and measurable. These MLL could be lindked up with the district and state level MLL.

In some subjects it is possible to conceptualise knowledge and skills in a heirarchical and quantitative terms while in others it is difficult. Some non-cognitive characteristics such as values and attitudes which children acquire during their education in the primary school cannot also be conceptualised in heirarchical and quantitative terms. The minimum performance levels should include both quantitative and qualitative aspects.

Minimum Levels of Learning should not become Maximum Levels of Learning

There is apprehension that once the MLL are formulated both teachers and students would set their sights on minimum standards and be satisfied with it without bothering to

progress beyond. There is also the baseless fear that MLL would
be unfair to children of minority and disadvantaged communities
Infact these children are the ones who are greatly benefitted
from the MLL. It is wrong to expect less from such children
and MLL is a means to help them get a fair education.

Regarding the apprehention that the minimum learning
level (MLL) would become the maximum, it is not true that
most teachers would reduce the content both by breadth and
depth and prepare all students to meet simply the minimum
competency standards and nothing more.

Minimum Levels of Learning and Minimum Competency Testing

MLL refers to what children should know and be able to
do in each subject at each stage of education. Keeping these
in view, the teacher has to formulate his instructional
objectives for each textual lesson. Instructional objectives
provide precise, observable and measurable statements of
goals. They state exactly what students can be expected to do
after completing the prescribed learning activities. Some of
these objectives should be such that they incorporate the
minimum competencies envisaged. For each lesson the teacher
has to prepare instructional objectives and these should go
obviously beyond the objectives related to MLL so that the
lesson is stimulating and challenging to the gifted students
as well. Any child falling short of the objectives pertaining
to MLL should receive the attention of the teacher for
remediation. The teacher has to decide his own course of
action to help such children improve their performance and
attain the MLL.

A sizable number of children by and large, display the
minimum competencies laid down in the MLL. The attainment of
MLL by the students can be known through tests carefully
developed by the teacher for the purpose. Such tests go by
the name "Minimum Competency Tests (MCTs)".

These MCTs are to be designed in such a way that they assess not only the attainment of the MLL by each student but also the extent of excellence attained by the students in the subject over and above the MLL. However, one should guard against the tendency to make tests rediculously easy so that an acceptable percentage of students tested can pass the requirement of MLL. MLL and MCT go hand in hand.

Advantages of MLL

- They give a sense of direction to the teacher in his teaching.
- They enable the teacher to assess the achievement of students in relation to objectives.
- They help the teacher in assessing the strengths and weaknesses of his students and provide necessary feedback and remedial programme.
- They make the teachers demonstrate the competencies which they expect from their students and thus enable them to serve as models for students to emulate.
- They enable the teacher to realise the need to have a strong content base and knowledge of teaching strategies.
- Students progress towards State level and National level MLL results in great satisfaction and motivation for the teachers.
- They make the teachers accountable for student learning and achievement.
- They enable the teachers to formulate gradually higher levels of learning for pupils to achieve rather than merely satifying themselves with the MLL.
- They enable the teacher to assess their own teaching styles and effect improvements in the teaching of basic competencies and beyond.

- They enable the teacher to develop suitable tests for assessing student progress towards MLL as well as higher learning outcomes.
- They help the teacher in motivating students to work harder and attain the basic competencies laid down.
- Every teacher knows what minimum knowledge, skills and abilities each student should display at the end of each textual lesson in each subject and at the end of the year as well as at the end of the elementary stage.
- MLL enable the teacher to see his role more clearly as a facilitator of learning and to reassess his own teaching styles and assessment procedures.
- MLL provide insights to teacher educators to plan their preservice and inservice teacher education programmes more realistically and purposefully.
- MLL enables the administrators and supervisors to decide what to look for while assessing teacher performance.

Targets for MLL

We have also to set targets realistically for ensuring that most children undergoing education at the primary and upper primary stages achieve these minimum competencies. The targets for MLL suggested by NIEPA (1990) reflect that "(a) 70% of children, including atleast 60% girls of every disadvantaged group, pursuing elementary education, will achieve the minimum levels of learning by the year 1995; and (b) 80% of children, including atleast 70% girls of every disadvantaged group, pursuing elementary education, will achieve the minimum levels of learning by the year 2000". (P. 29).

b/s

Module No. 10.

Minimum Level of Learning in Language

Dr.V.K.Sunwani,

"Language is not an abstract construction of the
learned, or of dictionary makers, but is something
arising out of the work, needs, ties, joys,
affections, tastes, of long generations of humanity,
and has its bases broad and low, close to the ground".

- Walt Whitman

Language is the single most important possession
of all human beings. It is all-pervasive and is bound up
with what we think, feel and do - as individuals and as
members of particular social groups and communities.
Language starts when the child has not yet completed his
first year on this terrestrial planet and continues with
him/her generally till the very last. Because of its nature
we often tend to take language for granted. We have spared
little thought to it as also to the fact as to what
rudiments of language should be acquired by the child to
develop his/her total personality. This is important for
the language of home and that of early socialization is an
integral and intimate part of our sense of self. Hence any
attacks on our different mother tongues are not taken
kindly. And, we are all, at least bilingual, because of the
inherent desire to preserve our own language and tradition
in the human and cultural group while living and working
within a different language community.

Before we proceed further let us ask ourselves-

- What is language ?
- Why do we use language ?
- When do we use language ?
- What are its social functions ?

As a corollary to the above it can be stated
at the outset that communication is the basic function
of language.

At the same time we might ask -

- What is communication? ·
- Is it verbal?
- Is it non-verbal? or both?

Therefore, we can say that:

Language &
Communication

Human language is a system for communicating
meanings using the vocal auditory tract and
verbal grammatical symbols.
- Language can be compared with other
cultural, communicative systems of symbols,
such as music, clothes, food etc.
- Human language is developed on an earlier
foundation of non-verbal signs and communi-
cative strategies: the paralinguistic,
involving voice tone, pitch and emphasis
and the kinesic, which includes the whole
area of body language.

To be able to communicate in a language
one should have command of the four basic
skills-

Listening
Speaking
Reading and
Writing

The mother tongue teacher therefore has a
very great responsibility. A good deal of confusion
of scope is demonstrated in the wide range of stated
responsibility of the teacher which includes:

Objectives of
M.T.teaching.

- skills of creative, interpretive communication.

- study of the objective aspects of language, its history, grammar.

- study of the devices and outcome of skilled users; literature, heritage.

- development of the individual or society.

While closely adhering to the development, of the above through the mother tongue we tend·to forget one important aspect -'that of literacy. Most of the burden of expectations in the mother tongue programme rests on the literacy programme. Mother tongue teaching is the chief mea ns of achieving literacy. In a broader.s ense literacy would also comprise:

Literacy

a) the complex inter-relationship of L.S.R.W
b) a general symbolizing developkent from
childhood
c) the function of this symbolising power
kha in the creation of meaning.

Language
Skills.

If we hope to foster literacy through the M.T. we have to be sensitive to all these funda-mental aspects of human development and learning. This complex inter-wearing of LSRW has to be-re-flected in the human relationship and interactions promoted in the schools. What we required to do to develop and value the many symbolizing activities which support and enrich early literacy such as.gesture, movement and-dance, role play and dramatic re resentations etc. At the same time the web of language has to be kept intaɛt in all its literacy..

In a sense, all the language skills are picked
up by children from a very early stage, not for purposes
of language, but in the wider sense of communication.
Literacy follows in due course of time. Language begins
with non verbal communicative behaviours and literacy is
developed by the desire to communicate. To begin with
literacy will therefore mean going back to theearliest
patterns of conversation that can be observed in the con-
versation like behaviours of infants and their mothers.
It also shows that the listening skills of infants and
young children are highly developed because they are able
to disc-rimin-te voices from other noises. They rapidly
come to recognise the particular voices of the persons
whom they are in constant contact with. It is important to
note that children are also sensitive to words as pleasurable
sounds. They delight in utterances which have rhythmic
movements, i.e. they are already using words as poetic
form. Hence the significance of talk for literary cannot
be overstated. Similarly children are 'reading' the eye
contacts, faces, gestures and postures of those persons
who care for them. Children start by reading for emotional
responsiveness - this is easily demonstrated by every child
who fixes an adult with a wide stare accompanied by
appealing smiles and body movements. Writing is a different
matter for it is a skill developed after sensori-motor and
iconic representation, established in the first two years
of life. The earliest forms of writing which children
undertake can be linked to mark-making or excitedly
daubing paint, crayon or food over a flat or vertical
surface accompanied by total bodily movement.

It is thus clear that the skills are already there.
What is to be done is that they have to be properly
channelised. The task becomes all the more easier when

we become aware that right from the very beginning
children are actively interested in 'meaning'. This
starts the children on literacy when they start sharing ad
and negotiating meanings through the use of signs, images,
gestures, and objects.

It remains to be seen how the skills already
acquired by children are brought to be used in the classroom.
To put it differently, we teachers have to create bridges
between the common-sense, everyday shared meanings children
have already explored and the specialised meanings framed
in literacy and other forms of knowledge. Children already
know a lot about their families, homes and communitie s.
They need time and opportunity for relating this knowing
and these meanings to the 'facts' of book literature.

Teaching the la- nguage skills

What then should go into the curriculum of the
language attainment of the early school goers?

Our basic purpose is literacy. And literacy thrives
when nourished on a diet of anecdotes, gossips and storis.
Oral story telling is the oldest and most powerful way of
getting children interested in books, in literacy. Many
stories, speculations and day dreams will need to evolve
and be told and re-told, played out and enacted, before
these differing ways of knowing can be linked to formal
learning. The children's storying and the teacher's role
as an essentially supportive partner and story maker
builds the bridge between experience and school learning.
The story-teller is the life line between the story and
the listener, and oral story telling is a special kind of
experience for children and teachers. Placing the skills
of narrating at the centre of the language curriculum ·
highlights this art. Moreover, the linguistic devices of
repetition, alliteration, rhymes etc. support and enrich
the memories of tellers and listeners. Good story telling
has to be magical-books or pictures do not come between

the participants and the tale. Imagination has to work on words, tone, vocal changes,eye contacts, facial expressions and gestures with which we have been familiar with - it is part of the foundations of language and learning.

The teacher must prepare for the story - he/she must value and enjøy it, have a clear·sense of its shape and an image of its characters and events. Most important, the teacher must have a real desire to share it with an enthusiastic group of children who form the audience. Further, children's own stories, highly personal, fascinate both authors and classmates, Once we have invited the children to tell stories we realise we have released a torrent of powerful material. Exchanging stories is just as crucial in the early years of education as the organised exchanging of books and toys. Story telling and its exchange should be given as much time, space and respect.

Books & Magazines.

So far as reading is concerned we can presume that any child who comes into contact with books, magazines newspapers orcomics has tapped the potential for involvement with with literature a nd literacy. The first encounters with books are shared with an older person and is associated with warmth and security. This strong emotional feeling becomes part of the total attention and concentration associated with books. The involvement with books in secure emotional contexts significantly point to the fact that reading is associated with pleasure. Picture books and initiate a child into the world of books for they lead to recognition, as also word-recognition. Literary texts, i.e. those found in books, display the literary uses of languge and are examples of powerful new ways of using words. The text is therefore the best possible intrdoduction to those uses of language typical of written forms:

performance, explicit references and cohesive devices.
The literary text is also important for it teacher/
children that literature is an aspect of human communi-
cation. The text builds a link between imaginary worlds
and daily realities. Reading is for information and
this is learned from satisfying experiences with books.
Children often enjoy total immersion in books ahd onnce
the teacher has achieved that, reading, besides being
for information, also becomes a pleasurable activity.
They also realise the place it has in their student
life as well as in the distant future as adults.

Hand
writing

      And finally, writing. At the outset it is both
process and product. Writing is a form of thinking and
communicating certainly, but it would be proper to first
think of it as was thought earlier as first and foremost
'handwriting' or calligraphy'. Good handwriting is to be
emphasized first along with the mechanics of writing -
the rustle of pen on paper.

Alphabets   Further, many children will be aware of alphabets
because families often buy them as posters and wall charts.
Children, these days, are also aware that they see
writing on television and theyrecognise the names of
programmes and products.

Games with   The most significant piece of meaningful writing
Names   in every child's life is probably his or her first name.
'Games with names' can be a powerful way into early
writing and communication. Children's developing
interests and observations are to be kept in mind and
this activity can be given a boost if ample examples
of names in use are provided. This excitement of reading
their own names as symbols of ownership and presence
could make them find, writing almost everywhere. At the
same time, another important aspect of writing,

spelling has also to be emphasised. Lastly, children's
interest in words important to them, words full of
meaning and feeling, is accompanied by a desire to
write or make them. This reminds us again that language
and literacy are bound up with feelings and emotions.

To conclude, then, language is at the centre of
all our activities, our universe. An adequate and
appropriate command of his/her language can inspire a
child and give him/her the required confidence. The
mother tongue teacher on whom falls the oncrous task
of initiating the children into language has yet a more
difficult task, that of not only nurturing, a language
for life' but the very quality of the life of the learner.
The mother tongue as a school subject holds a central
position because

**Importa-
nce & the
M.T.**

1. the M.T. is the means of expression and commu-
   nication as regards a pupil's perceptions,
   thoughts, feelings and will;

2. with the help of his MT a pupil creates a picture
   of the world and participate in national and
   international culture.

3. a good command of the M.T. constitutes a founda-
   tion for the learning of foreign languages;

4. the teaching of the M.T. furthers the skills
   needed in studies, and supports the teaching of
   all subjects.

Having stressed the importance of the MT in any school
curriculum it would be in the fitness of things to remind
ourselves of what is to be emphasised through the
teaching of MT.

ims of MT
eaching

1. the primary aim should be to promote the skills involved in communication.

2. An important secondary aim should be the development of pupil's sensibilities through the reading of literature.

3. It is essential to these aims that pupils should talk, write and read as much as possible.

4. Since pupils must want to read and write, teachers should seek means to induce them to do so.

5. Consequently, all the work should be conducive to both pleasure and the sense of satisfaction that arises from achievement.

Mother tongue teaching therefore has not to be abandones - it has to be encouraged and improved.

References:

1. Whitehead, Marian R. Language and Literacy in the Early Years, Paul Chapman, London, 1990.

2. Opitz K., ed: Mother Tongue Practive inthe Schools, UNESCO Institute for Education, Hamburg, 1972.

Module No. 11.

Title of the Modules :- Minimum Levels of Learning -
Work-Experience.

Sri P.K. Mohanty

Objectives:-

To held participants to:

-- Learn to handle the various tools provided in the
Mini Tool Kit.

-- Plan activities in which various items of the kit
can be used.

-- list activities those lead to achievement of MLO.

-- demonstrate a variety of activities to help
attain MLOs.

-- prepare a list of tools necessary to undertake
activities for classes VI - VIII.

Content out-line:

-- Introduction
-- Description of various items of Mini Tool Kit
-- MLOs for classes I & II
-- Demonstration activity for classes I & II
-- MLOs for classes III
-- MLOs for classes IV, V
-- MLOs for classes VI, VII, VIII
-- Evaluation of W.E.
-- Demonstrative use of Mini Tool Kit
-- Demonstration activities for various classes.
-- Group work to
  (i) Prepare MLOs specific to their own area
  (ii) Plan to demonstrate an activity
  (iii) Prepare a list of additional tools

Transactional Mode: Discussion, demonstration and Group
work.

Time: 12 hours.

M O D U L E 16.5

WORK EXPERIENCE/SUPW

Introduction:

Work experience has been accorded a very significant place in the curriculum at all stages of school education. As stated in the 'National Curriculum for Elementary and Secondary Education - A Framework' (Revised Version 1987), "Work Experience should be an essential component at all stages of education, and be provided through well-structured and graded programmes". It has been recommended that at primary stage 20% of the total duration of school hours should be allocated to this subject area. This places work experience at number two in priority, the first being language which has been allocated 30% of the total time during which the child stays in school.

The major aims of work experience programmes at primary stage should be development of habits of healthy living, awareness of the world of work and work ethics. It should also inculcate in children a respect for manual work, values of tolerance, cooperation, and proper attitudes and values related to productive work.

The work experience activities at this stage should be simple and enjoyable. These may include observation of work situations and identification of problems, participation in work situations and preparing articles.

Objectives

This write-up has been prepared to help the participants to:-

-- learn to handle the various tools provided in the Mini Tool Kit.

-- Plan activities in which various items of the kit can be used.
-- list activities those lead to achievement of MLO.
-- demonstrate a variety of activities to help attain MLOs
-- prepare a list of tools necessary to undertake activities for classes VI - VIII.

Materials:

for attaining Minimum Learning Outcomes (MLOS) identified for the primary stage of education especially for classes I & II, a variety of activities can be planned from the waste material and material available in the environment/school, such as:-

-- flowers, twigs of plants, leaves, pebbles, sea-shells etc. crab shells, egg cells.
-- old clothes, cuttings of clothes, cardboard, greeting cards, newspapers, old magazines, cotton, thread, coloured paper etc.
-- exhausted food tins, powder tins, spoons, broken mechanical toys etc.
-- tools and materials related to gardening etc. ·
-- gum, needles, scissors, etc.

Under the centrally sponsored scheme of Operation Black-board a 'Mini Tool Kit' has also been provided to each school.

Besides the tools in the Mini Tool Kit, some of the items provided in the primary science kit such as scissors, nails, gum etc. can be used as and when required.

The Mini Tool Kit consists of the following major items which can be used in performing various tasks in classes III-V.

1. <u>Vice</u> is used for holding material such as wood, plastic, tin, sheet before cutting/bending it. It can be clamped to a wooden table/or any other wooden plane kept at suitable height.

2. <u>Helf Round Rasp</u> can be used for a rough filling of the flat, concave and convex surfaces of wooden plank. The handle of the rasp packed separately is to be attached to the file before use.

3. <u>Multitool body</u> is a hollow structure to which a no. of items such as carpentry saw, collect, chisel, screw driver, punch, flat drill, triangular file can be attached according to the requirement.

    Any one of these can be held in the nozzle side of the body and tightened with the help of a fly screw provided for the purpose. The plastic cap provided on the other side of the body can be fitted or removed as and when required.

    The various fittings of the multi-tool body can be used for various tasks such as cutting soft wood/plastic, screw driving, punching, drilling, smoothening, sharpening small tools such as teeth of carpentry saw, making, grooves etc.

4. <u>Junior Hacksaw</u> can be used in cutting materials like wood, plastic, soft metals etc.

III. HANDLING TOOLS AND OTHER ITEMS OF THE KIT

1. Vice:

The construction and clamping of vice are shown in figures 1 and 2. In the configuration as in figure 1 the vice can be held in hand and used. The screws and the jaws of the vice wear out with time. To prevent quick wearing out grease or oil may be applied on screws. Each of the jaws should be masked with a bent metal strip as shown in fig. 2a. The flat portion of the vice can be used as an anvil.
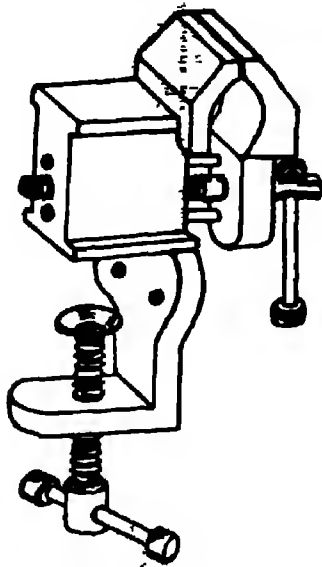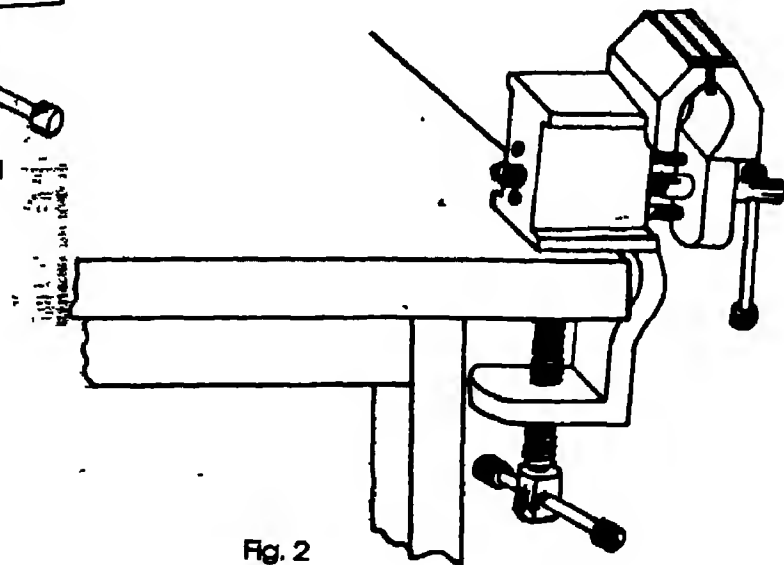
Fig. 1

Fig. 2

(a)

Round Rasp:

in fig. 4 the handle of the rasp packed separately is to be attached to the file. rasp can be used on flat, concave and convex surfaces. The rasp is to be used wood only. Its use has been shown in fig. 3.
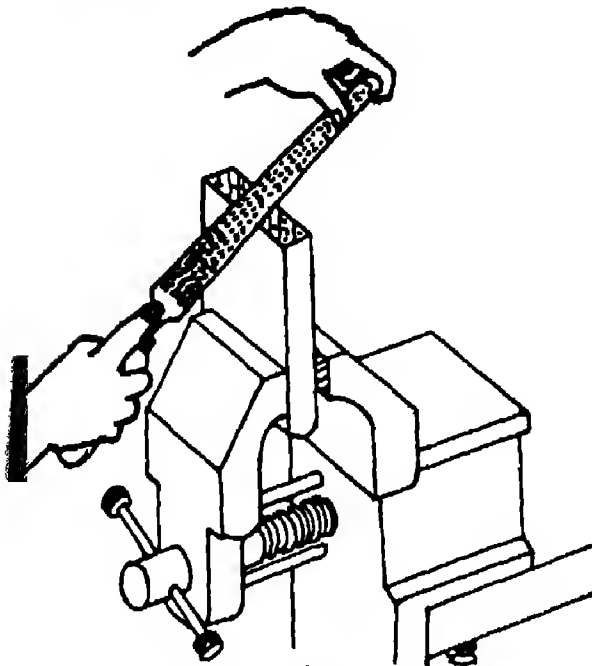
Fig 3

Fig. 4

Multi-tool body

The multi-tool body with different bits i e. (a) Carpentry saw, (b) Collet, (c) Chisel,) Screw Driver, (e) Punch, (f) Flat drill, (g) Triangular file, is shown in fig. 5. Any one of ese bits can be held in it and tightened with the help of a fly screw. On the other d of the multi-tool body there is a plastic cap which can be removed or fitted as sired The small bits i.e chisel, screw driver, punch and flat drills can be stored e the body.

The end of the multi-tool body which receives the plastics cover can be used as punch to make washer from soft sheets of cork, rubber etc. For punching washer e multi-tool body is to be held by the left hand and hammered from the other end piece of wood to be placed on the end to be hammered to avoid damage to the ody as shown in fig 6. Figs 7 & 8 show the details of the assembly of multi-tool body, ollet and flat drill
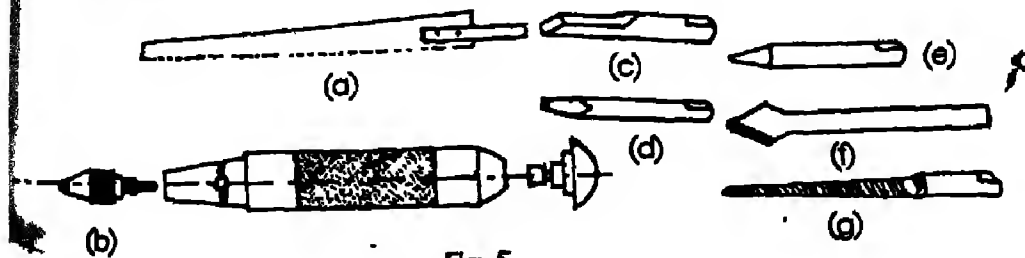
Fig. 5

The collet is fitted to the multi-tool body and fixed by tightening the fly screw. The collet jaws are then opened by rotating the collet body.. The desired drillbit bit is then inserted in the collet body. The drilling operation is shown in fig. 8b. For a right handed person the plastic cap is pressed under the palm of left hand, while the axis of the multi-tool is kept vertical. The body of the multi-tool is rotated by the right hand If it is not possible to rotate it by hand, the handle of the hammer can be inserted in the hole on the multi-tool body to get leverage for rotation.

Fig 9 shows how to make a coil spring from ordinary m.s. or brass wire with the help of multi tool body and vice.

Fig 6

Fig 7

Fig. 8 (a)

(b)

Fig. 9

ny Saw
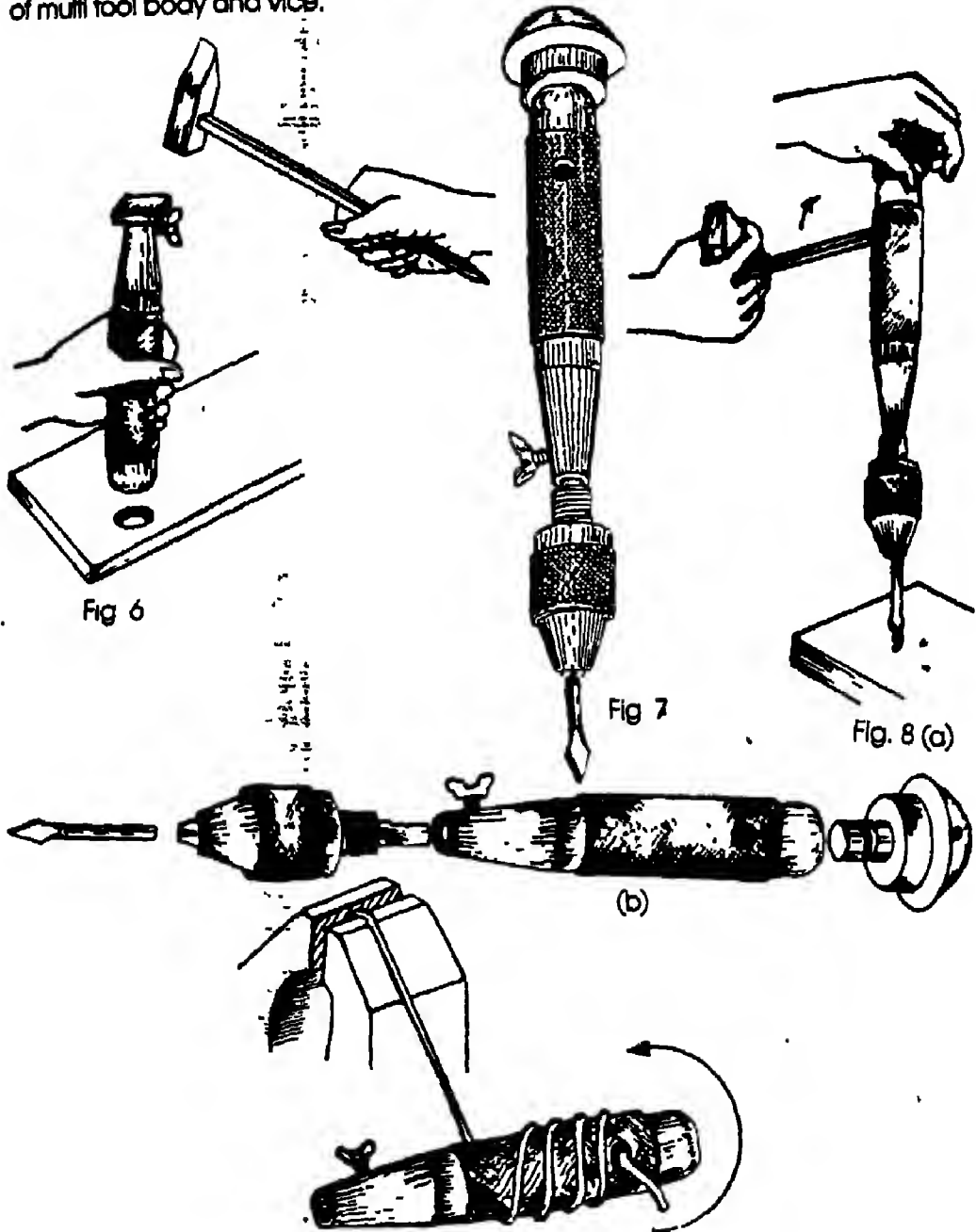
w is to be held in the multi-tool body and used as shown in fig. 10.
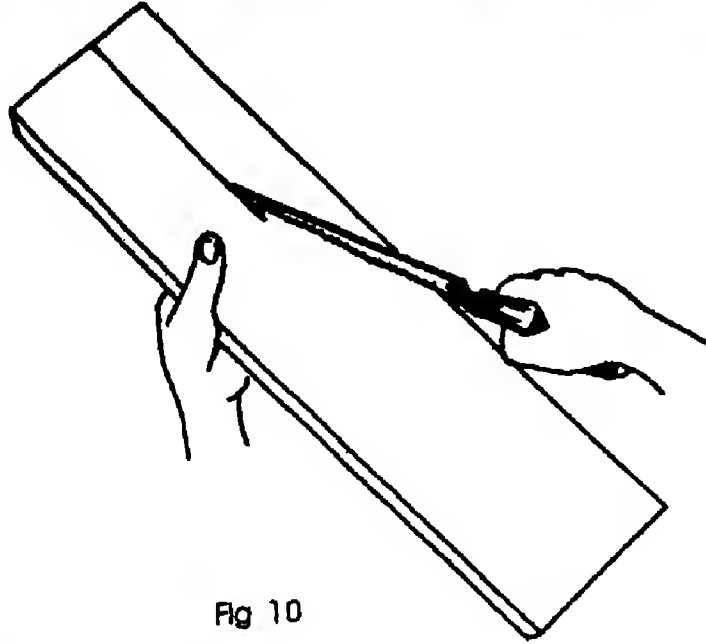
Fig 10

pentry Chisel

) chisel bit is to be held in the multi-tool and used to make grooves etc. as n fig. 11.
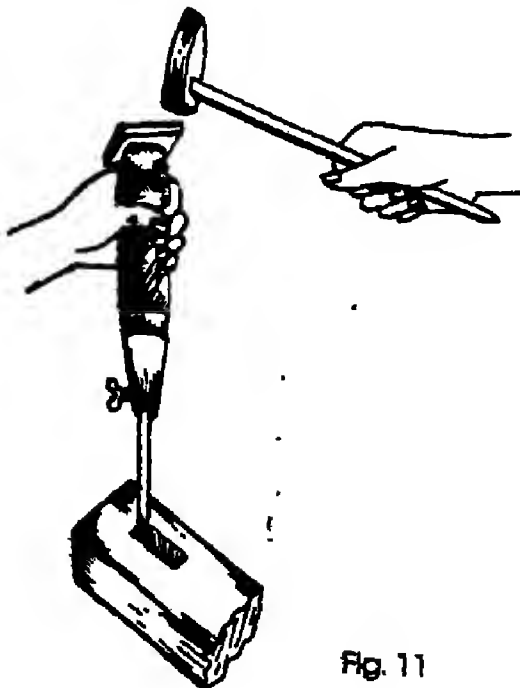
Fig. 11

6. Screw Driver

The screw driver is to be held in the multi-tool body and used as shown in the fig. 12. Sometimes it becomes comfortable to tighten screws if the multi-tool body is rotated keeping the left hand on the plastic cap as done in drilling as shown in fig. 8(b).

Fig 12

7. Triangular File

The shank extention of the triangular file can be held in the multi-tool body and filing operations can be done. A typical filing operation while sharpening the teeth of the carpentry saw is shown in fig 13.
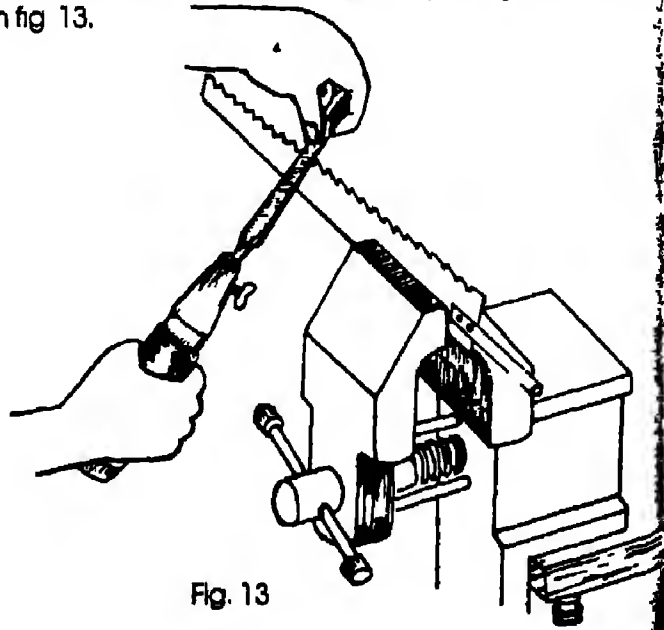
Fig. 13

a, b Collet and Flat drills

Collet is shown in figs. 7 & 8. The flat drills are made by hammering nails and ling their ends flat. The nail head is cut off and burrs are removed (fig 8).

Junior Hacksaw
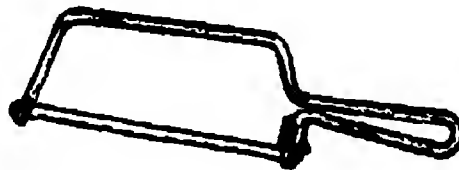
Fig. 14

10 Cutting Blades

The junior hacksaw can be used in cutting materials like wood, plastics, soft metals etc. It should not be used in cutting iron and steel The blade in fig. 14a is fitted to the frame with the help of 2 pins as shown 4 such blades are given in the kit.
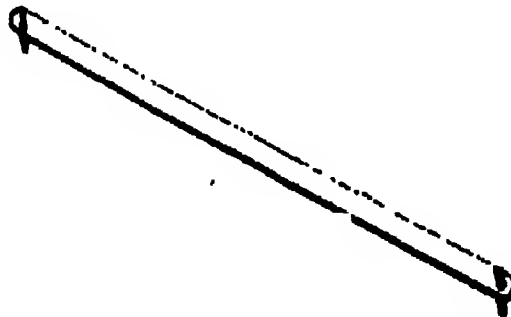
11. Hammer with Handle

The hammer with handle has been shown in fig. 15 It is used as a light duty general purpose hammer. Handle end can be used as a screw driver.

It can be used as a balance. For this the pin is to be inserted in the holes shown in fig. 16. On this pin the slider on the hammer handle is to be fitted as shown in figure 17. On the notch at the tip of the hammer handle, the wire suspension with pan will be placed. In the configuration shown in fig. 17 the slider is to be adjusted so that the hammer is balanced without putting any weight on the pan, keeping the pin as the hinging point. The student will now put known weights starting from 100 gms upto one kg. in suitable steps and mark a point on the handle for each weight After this
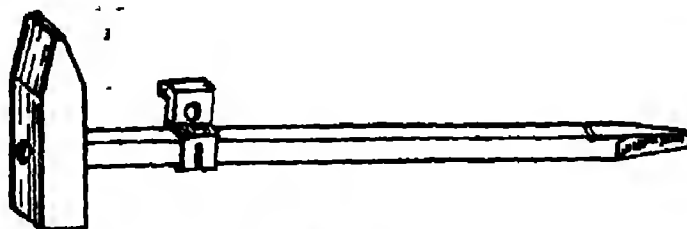
Fig. 15
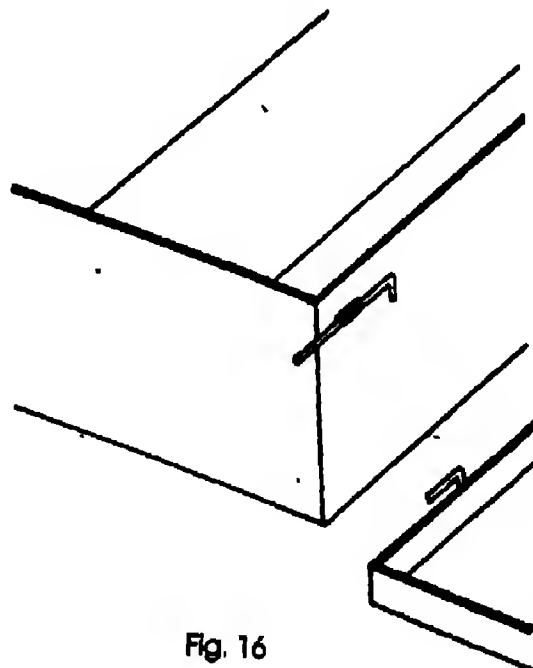
Fig. 16

done the hammer can be used with reasonable accuracy for
weights upto 1 kg. The hammer can also be used as a trysquare as shown
construction of the hammer is such that the head is perpendicular to the
ne.

different sizes

Fig. 18
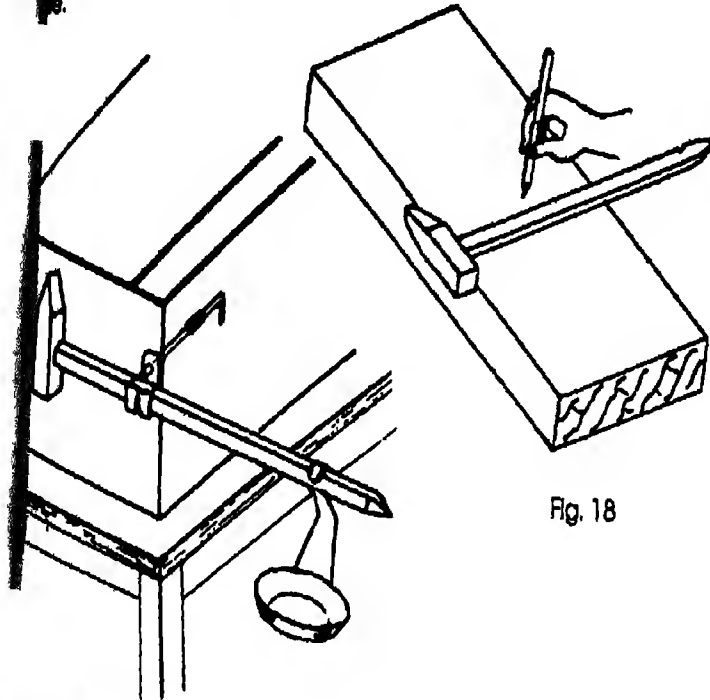
Fig. 17

utter Cum Pilers

has been shown in figs. 19 & 20. In addition to the cutting function as shown
20, the same may be used as pliers using the 2 jaws on its legs.
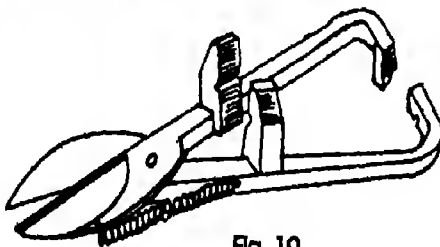
ore parallax
equate care

Fig. 19
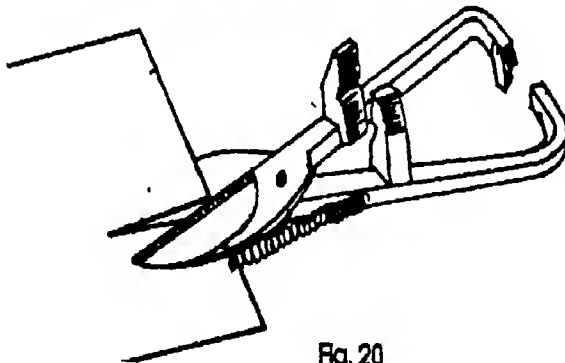
Fig. 20

13. Bicycle Wrench

This is shown in figs. 21-22. This is used in screwing and unscrewing different sizes of nuts and bolts.
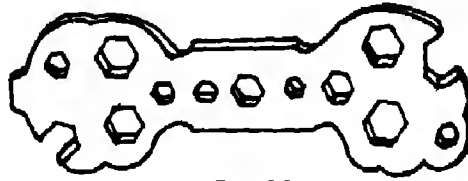
Fig. 21
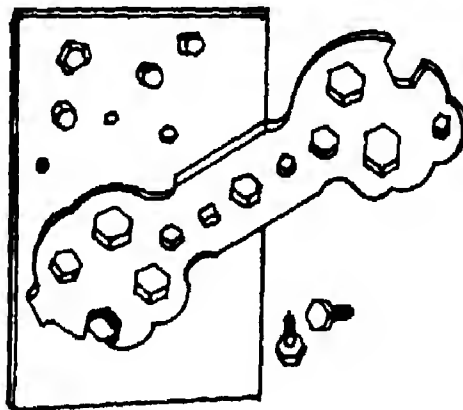
Fig. 22

14. Steel Ruler

This is for measuring and laying out work. The ruler is thin and therefore parallax error in marking is reduced. This can also be used as a straight edge. Adequate care is to be taken so that edges and ends are not damaged.

Fig. 23

wn in fig. 24, the divider is used in ......
materials like wood, plastic etc. When marking on metal sheets, chalk is
t on the surface and then it is marked so that the lines become very
A pointed nail can be used to draw straight lines while marking. The
uld be used only for marking circle and arc.

Fig. 24

re Punch

point on the job surface which is to be drilled is first punched by the centre
shown in fig. 25 The centre punch can be used in marking on any metal
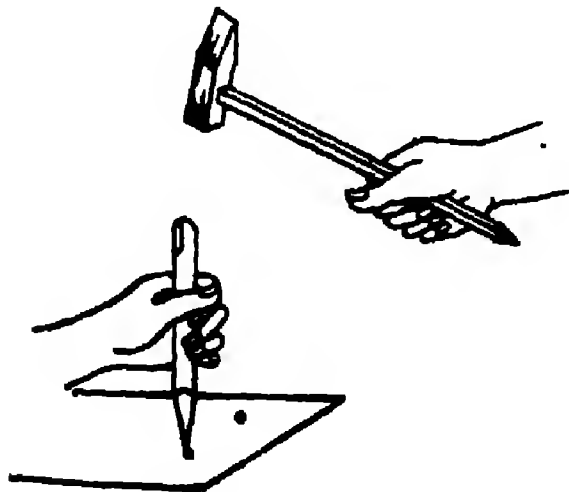
Fig. 25

17. Magnet

Young students enjoy playing with a pair of magnets while feeling attraction and repulsion between the two magnets. Many experiments with magnets may be designed including those with iron filings and magnetic compass. A ferrite magnet is brittle. It is advisable to keep it inside a plastic tube of suitable size.
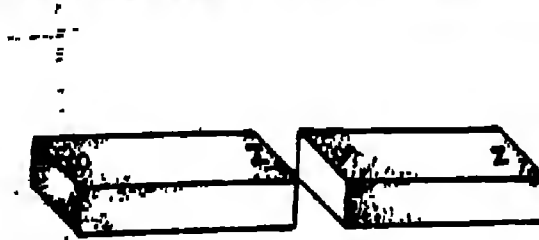
Fig. 26

18. Soldering Iron

The soldering iron (fig 27) has a copper bit which is heated by electricity. Soldering iron must be able to heat the job to the temperature at which the solder will flow. A soldering iron which cannot heat the workpiece sufficiently will not be able to make good solder joints. The bit will be heated so as to reach a temperature at which the solder will melt readily. The tip is to be dipped in the flux and the solder will immediately be applied to cover the metal. For a good joint the solder is to flow in the joint so that it looks smooth and wet. The tip is to be filed from time to time to remove oxide and deposits.
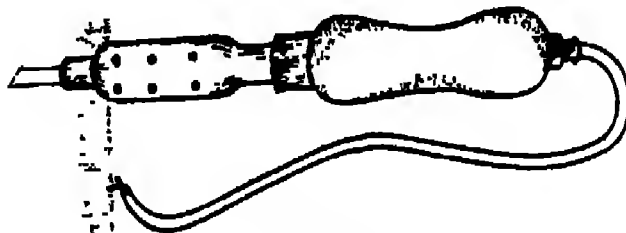
Fig. 27

ding wire with Crocodile Clips

wn in fig. 28 these are used in making different electrical connections
ng on electrical and electronics projects One such use is shown in fig.
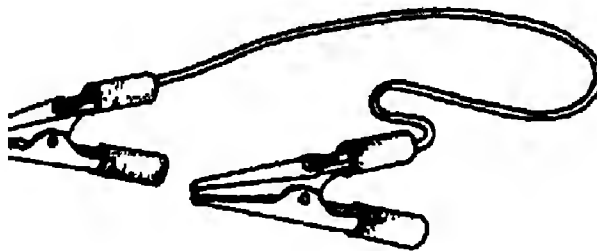
Fig. 28

holder

plastic cell has metal terminals and springs. Two R-6 cells can be fitted there
and crocodile clip of the connecting wire will be clipped on the terminals for
ing the cell to a circuit as shown in Fig. 29.
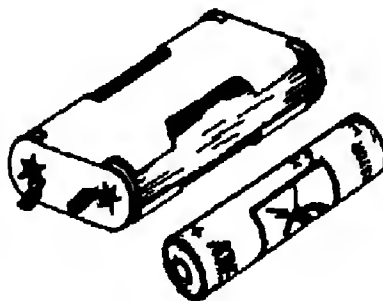
Fig. 29

Exercise A)

The wooden strip shown is to be sawn and parted off the line x-x asshown in
Fig. 32.
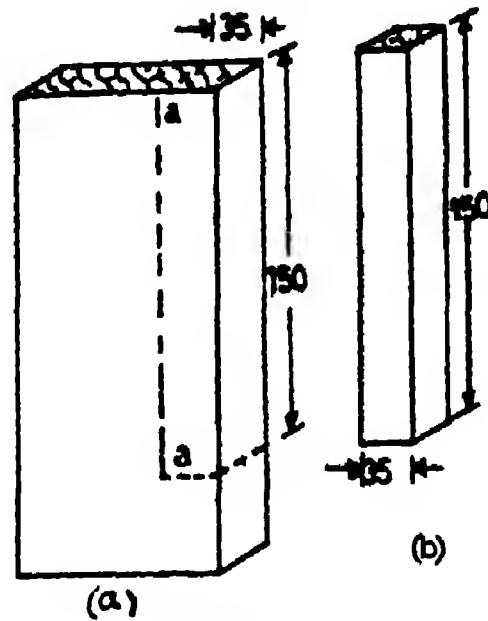
Fig. 32

Exercise (B)

The top edge of the wooden strip is to be sawn and parted off as shown in
Fig 33.
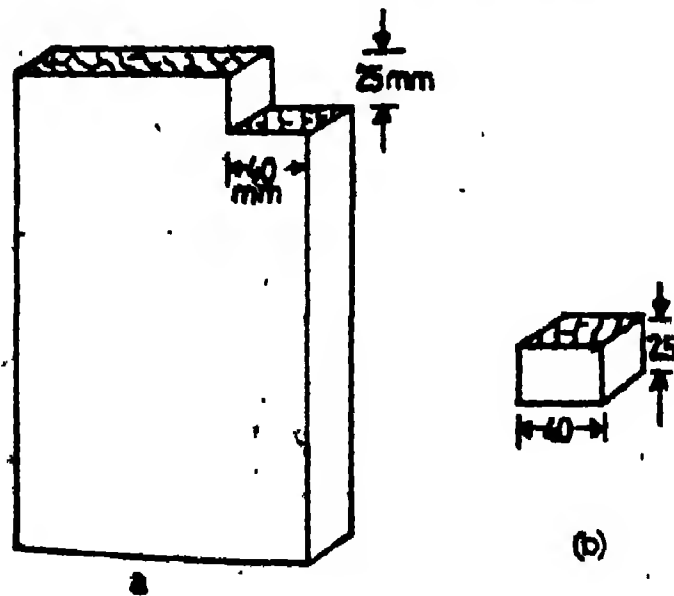
Fig. 33

Exercise (C)

A cylinder is to be shaped as shown out of the parted off strip in exercise (Fig. 32b)

(a) (b) (c)
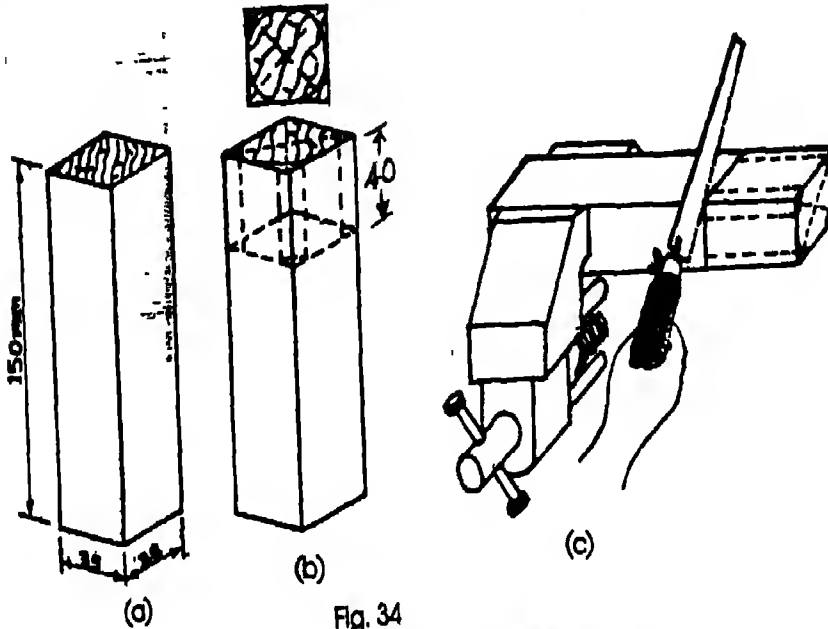
Fig. 34
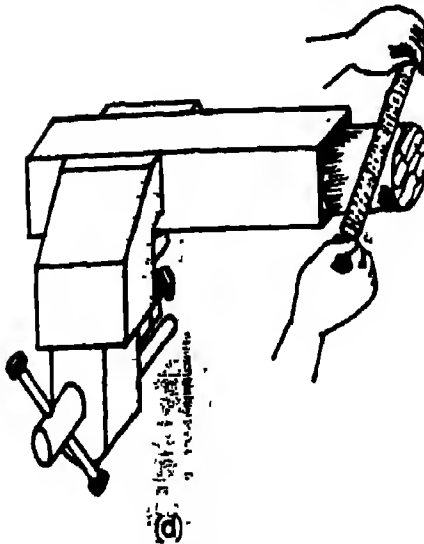
a – rough piece

b – after smoothening all faces, check perpendicularity of faces and mark lines

c – after clamping in the vice cut edge remove corners to make a cylinder

d – finish the cylinder with the help of the rasp

As the sharp o that it can cutting or

of suitable le between same way is not in use.
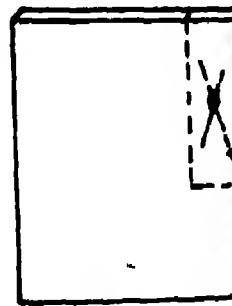
Fig. 35

Exercise (D)

A plastic strip is to be cut along the line shown in fig. 35. The faces of the parted off small strip is to be smoothened and sharp edges are to be removed. A hole is to be drilled at the centre of the small strip. Proportionate dimensions are to be assumed

s a half lap joint. Both halves have identical slots Depending on the size
ailable, the slot dimensions may be assumed proportionate. A hole is to
ifter the joint is made. A bamboo pin to fit the hole may be made and
e hole.

(a)

(b)

(c)
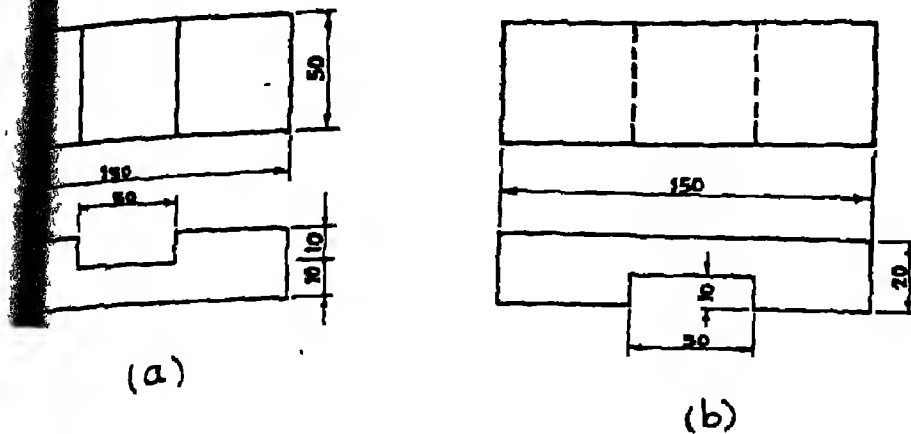
Fig. 36

lamp one of the pair of wooden pieces on vice: Mark and use saw, chisel, &
ammer, rasp to produce half groove.

peat the above operations on the other half.

in the two pieces. The joint should not be loose. Make a hole in the centre with
help of the drill. Make a bamboo pin of proper size with the help of saw, chisel
d rasp. Force the pin through the hole.

Project 1. BLADE HOLDER
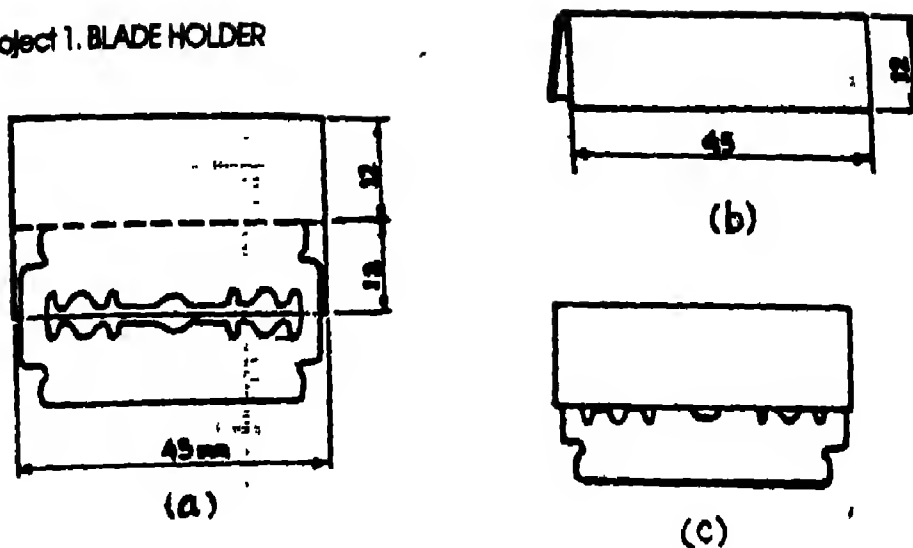
Fig. 37

Purpose:

Used blades are required to shape many things in e very day life. As the sharp edge of t he blade injures fingers, half of the blade need be covered so that it can be held conveniently between the thumb and index finger while cutting or sharpening.

How to make:

Take a mild steel or aluminium strip from s crap, 24 mm x 45 mm of suitable thickness say 24 swg or 0.63 mm. Fold the strip on the vice. Insert the blade between the leaves. The leaves are gently hammered so that the grip is firm. In the same way a second holder can be made to cover the other edge while the blade is not in use. The blade with covers is to be packed suitably in the kit.

Tools required:

Ruler, punch (multi-tool) hammer, vice, file (multi-tool).

Project 2. PULLEY
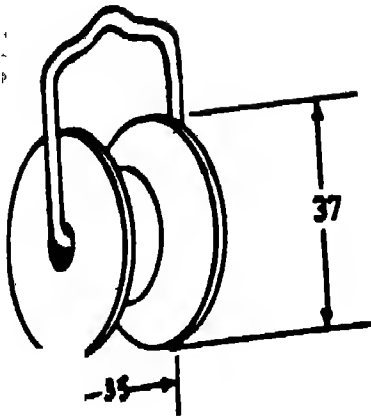
Fig. 38
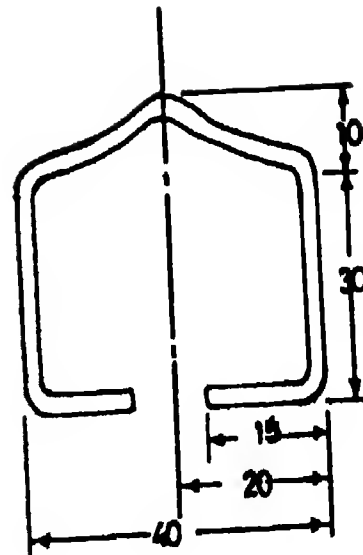
Purpose:

We have seen how a pulley is used in lift ; a bucket of water from a well. Using combination of such pulleys one can lift heavy loads with small effort.

How to make:

Used up wooden or plastic reels are thrown away by the users. These reels are of various sizes, one of 37 mm diameter x 35 mm length with a central hole can be taken. Iron wire 3 mm diameter x 150 mm long may be taken and bent in the form of a frame as shown. It is then fitted in the reel so that it can be suspended from a stand or hook for lifting an object.

Tools required:

Ruler, vice, hammer, plier ·· · file.

Project 8. FLAT SPRING BALANCE
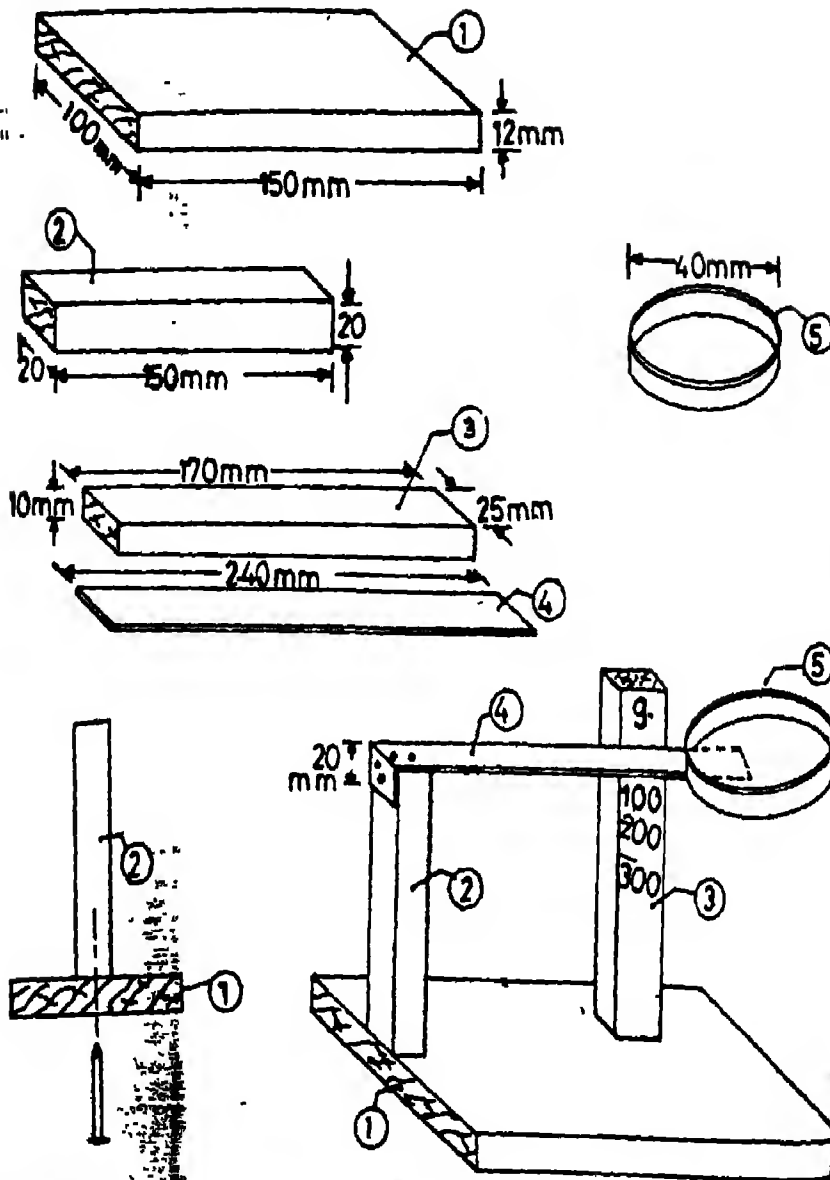
Fig. 44

Purpose:

A spring balance is used for weighing. A thin steel strip nearly 240 mm long is fixed on one end as shown in fig. 44. If any weight is put up on the other end, the strip bends downwards. If the load is removed, the strip comes back to its original position (upto a certain value of the applied weight). As one puts more weight the strip bends more. For example if the strip bends through 20 mm under 100g, it will bend 40 mm under 200g and so on (upto a limit). Spring balances are constructed on the principle.

Ho\

g. 44 the wooden base (part 1) is sized with the help of the

saw and half round rasp. Similarly wooden parts 2 and 3 are also sized, part 2 is then joined to part 1 as shown. Similarly part 3 is joined to part 1.

Now cut a fairly straight piece of steel strip from a discarded box strap. One end of the strip is bent so that it can be screwed or nailed to part 2 as shown in fig. On the other end of the strip a metal lid nearly 40 mm diameter is to be fixed by short and thin nails. The pointed end of the nails are to be hammered and made flat.

Mark with a pen or pencil a line on part 3 showing the original position of the strap. Put known weights in steps of 50 or 100g (not beyond 300g) and mark corresponding positions of the steel strip on part 3. Now the balance is ready to read any unknown weight in the range of 0 to 300g.

Tool required:

Ruler, divider, vice, saw (multitool), rasp, tin cutter, hammer

Part No.	Name	Material/Nos.	Remarks
	Base, 150 mm x 100 mm x 12 mm	Wood, one	—
	Support 20mm x 20mm x 150mm	Wood, one	—
	Stand for graduation 25 mm x 10 mm x 170 mm	Wood, one	To be graduated with the help of known weights
	Steel strap, thin 20 mm x 240 mm x 0.5 mm	Steel (from packing box strap	To be bent and nailed on part 2
	Metal lid of a jar 40 mm diameter	tin or aluminium	To be fixed with two small nails on part 4
	Nail	Iron, eight	—

measures of 25 mm, 50 mm, 100 mm, 200 mm, 500 mm and 1 metre. He can measure his own fingers and other, common objects to have a fair estimate of dimensions. He will then draw regular geometrical figures of various dimensions on thick cardboard sheets and make cutouts of various shapes e g. square, triangle, rectangle, hexagon, circle etc.

Exercise (c)

The use of trysquare will be appreciated if the students examine adjacent faces of common objects like box, table top, rectangular legs of tables, chairs etc. for perpendicularity. The 'T' of the hammer can be used for checking perpendicularity of adjacent faces of an object.

Now a small wooden plank or strip is taken, one of its faces is carefully filed with the help of the rasp and vice. The 'T' of the hammer is now used to draw lines on one face perpendicular to the edge(Fig 18) The student can practise drawing many such lines and compare the lines with each other and with the edges

5. <u>Hammer with handle</u> is used as a light duty general purpose hammer. Handle can be used as a screw driver. This item can also be used as a balance by inserting the pin (provided) in the holes of slides on the handle. The wire suspension with pan is to be placed on the notch at the tip of the handle. This can also be used as a Trysquare.

6. <u>Tin cutter cum pliers</u> is used for cutting tin and also as pliers using the fans on its legs.

7. <u>By-cycle Wrench</u> is used for screwing and unscrewing different size of nuts and bolts.

8. <u>Centre Punch</u> is used for punching/marking the surface where drilling is to be done.

Classes I & II

Minimum Learning Outcomes (MLOs)

The learner should:

-- develop the habit of keeping himself, his belongings, his class room clean.
-- select the various items from waste materials that can be used to make a specific item such as a flower vase, wall handing, and toy like a doll, a bird, an animal etc.
-- acquire the skill of using tools like pair of scissors, needle etc.
-- acquire the skills such as threading a needle, cutting paper/cloth/cardboard on marked line, stitching, pasting etc.

-- prepare items or parts of the items in appropriate size and shape.

-- share the materials and tools with the other members of the group.

-- prepare/make the specified item.

-- collect vegetables, vegetable seeds, flowers, identify them/name them, group them according to season and prepare charts and albums.

Tools and Materials: Used sack cloth, old/cuttings of clothes, used greeting cards, card board, old magazines, twigs of plants, coloured paper, thread chalk etc.

Needles, scissors, blackboard, pencil ruler.

Activity: Making doll.

Steps:

-- Ask the children to identify the suitable materials (already collected) required fro making a doll.

-- Draw the figure of the doll, different parts of its body on the blackboard.

-- Form small groups of children each of 6-8 children.

-- List down the assignment(s) of each group such as marking of the outline of different parts on old cloth/used sack cloth/

-- cardboard, cutting the material on marked lines; stitching different parts of the body; suffing each part with used cotton/cuttings of cloth/ husk of plants/grans; joining the parts of the body through stitching; marking the features (eyes, nose, mouth, ears etc.) on the face; preparing dress for the doll etc.

(If the doll is made out of cardboard the processes may
involve only marking, and cutting the outline, cutting &
pasting coloured paper to mark the dress, making the
facial features etc.)

-- Allot one assignment to each group.
-- Exchange the tasks assigned to each group in the
   next activity(ies) involving similar processes to
   help each group acquire all the skills involved.
-- Fix appropriate time for completing each task/
   part of the task.

Evaluation:

To evaluate the achievement of individuals/groups
in acquiring various skills, the teacher will have to
depend mostly on observation of children engaged in the
activities. The observations must be comprehensive and
continuous. The achievement of the MLO should be graded
on the basis of these observations. Evaluation tools and
techniques like observation schedules, rating scales,
checklists may be developed for this purpose. These tools
need not be very sophisticated and standardised.

For evaluating the performance of the group in the
above mentioned activity the following observations may be
made:

-- contribution of individual participant
-- quality of the finished product in terms of shape,
   size, proportion of each part, fineness of the
   product etc.
-- time taken by each group in completing the task
-- condition of the place of activity after completion
   of the task.

-- storing of the tools and materials after use.

To further elaborate, the observation on the contribution of each child may be made through, a check list which may be prepared listing the various steps such as:

-- selection of correct material
-- measuring and marking the size of part to be made
-- attempts made in cutting on the marked line
-- attempts made in threading the needle
-- taking initiative in making first attempt in the group
-- time taken in acquiring each skill
-- condition of the work place left after completion of the activity

Similarly a five point rating scale as given below may be used for grading the child on the MLO'shares the material and tools:

Shares the material/ tools	A Always	B Often	C Sometimes	D Rarely	E Never

The teachers can attempt to prepare similar/other tools to facilitate making objective assessment of children.

Class III

Minimum Learning
Outcomes (MLOs) : The learner should:

-- identity the multi-tool body, hammer provided in the Mini Tool Kit

.- acquire the skill of removing the plastic cap fitted
on the multi tool body and take out the various items
placed inside the body.

.- acquire the skill of clamping the vice to a table top
or a plank of wood.

.- learn the technique of holding the carpentry saw,
carpentry chisel, screw driver, collect, punch, flat
drill, triangular file in the Multi tool body, for
sawing, Chiselling, screw driving, punching, drilling,
filling etc.

-- acquire the skill of hammering, sawing, chiselling,
drilling, screwing etc.

-- acquire the skill of cutting by the snip.
(The students will learn all the operations those can
be carried out by the multi-tool body. They may do so
by doing small utilitarian/play way projects to be
planned by the teacher & students depending on the
availability of materials)

-- acquire the skill of planting seedlings in pots,
watering, manuring etc. of the plants thus planted.

Class IV & V

The learner should develop skill in handling the
Multi tool kit.

-- perform operations to complete the project as per
sketch supplied by the teacher either individually
or in group.

-- prepare bed for raising seedlings

-- prepare bed for sowing seeds

-- prepare pots for growing plants
-- plant cuttings and grafted plants etc.
-- take care of potted plants.
-- water, weed or manure plants.
-- collect, identify and make charts of manures, fertilizers.
-- develop skill in handling garden tools.
-- study the effect of different variables e.g. Soil, water, manure, light etc.
-- prepare projects of more difficult nature like - tin metal work, hangers of aluminium wire (fixture supplied), plaster of paris work (mould supplied), ply wood models of houses, carpentry or bamboo toys, cloth craft.
-- acquire idea of circuits and connections with dry cell and torch light bulb.
-- acquire the skill of observation of local productive activity, skill of questioning and taking down note.

Class VI - VIII

Minimum Learning Outcome

-- develop habits of cleanliness through dusting of furniture, cleaning of class room, cleaning of school compound, filling up water in earthen pots/tubs etc.

-- prepare pits for planting fruit seedlings, planting, watering, manuring, weeding, observing and recording stages of growth and taking remedial measures to make up deficiencies.

-- vegetable gardening and cooking
-- washing mending and stitching & ironing of clothes
(handkerchief; pillow cover, asan etc.)
-- maintenance of sunple articles of use, maintenance
of school wall, painting of school roof.
-- decorating of class room, school on special occasions
like national holidays, festivals etc.
-- flower gardening
-- cleaning of neighbourhood
-- helping adults in productive work
-- preparing articles of use from raw materials like
wood, tin sheet, leaves, grasses, coconut shells
etc. (Broom, bag, book binding, duster)
-- maintaining simple accounts of expenditure
-- preparing pickles, fruit juice etc.

Evaluation:

Observation of the learners engaged in the activity
is the major tool for evaluating the various aspects of
their attainment. For assessing the acquirement of skills
check lists or rating scales may be used. Various skills
involved in performing the task should be listed down
and average time required for performing the activity or
a part there of may be worked out.

The learners should be evaluated in terms of
- time taken to perform the activity
- number of attempts made
- number of errors made

To assess the social behaviour/inculcation of values, rating scales (as far as possible five point scale) should be used e.g. for judging the sense of 'cooperation' the learner's behaviour can be graded on the scale given in activity for classes I & II.

At times paper-pencil tests can also be arranged for assessment of the understanding of principles involved in performing activities involving the use of tools already handled by the learners e.g. in the activity mentioned they have learnt the driving of a screw. If it is to be driven in a wooden wall. Some questions that can be asked may be as follows:

1.   How will you mark the point at which screw is to be driven ?

2.   What will be the position of the multi-tool body while driving the screw ?

3.   Select a tool used for smoothening the wood surface.

4.   Enlist the various operations performed with Multi-tool body.

DEMONSTRATION ACTIVITIES

Note:

The demonstration activities given below are only examplar. They should not be considered in isolation of what has already taken place in the classroom which may act as a motivation/need for undertaking a particular activity and also its relationship with subsequent activities.

Also the activities suggested for classes III to V are based on use of material from Mini Tool Kit. This however, does not suggest that all activities have to be based on this material only.

Mini Tool Kit:

The pages that follow deals with the operations that can be undertaken by the compents of Mini Tool Kit. They are supplemented with operational figures. A few projects are enclosed for practice.

N.B: This 'write up' is prepared on the basis of NCERT document on Minimum Learning Outcomes for elementary stage of education.

A project for class - V

Bamboo made 'Bird'

Skills to be acquired: Cutting, Drilling, use of
                          rasp file, etc.

Procedure

1) Select a straight surfaced bamboo having
   dia 6 cm. and 3 cm.

2) Adjust and tight the saw blade with multi-tool.
3) Cut-off the 6 cm. dia bamboo having length 6 cm.
4) Cut-off the 3 cm. dia bamboo having length 3 cm.
5) Both pi ces of bamboo must be joined as per
   drawing with the help of Aerol-dite or
   Dendrite gum.
6) Prepare the base (as Fig.) with a bamboo and
   make two holes for fixing the legs.
7) Make two legs, 2 wings and one tail with bamboo
   swip & smooth these pieces with rasp file and
   sand paper.
8) These bamboo pieces must be fixed with the body
   using gum.
9) After drying the gum, the legs must be inserted
   in the hole made on the base piece.
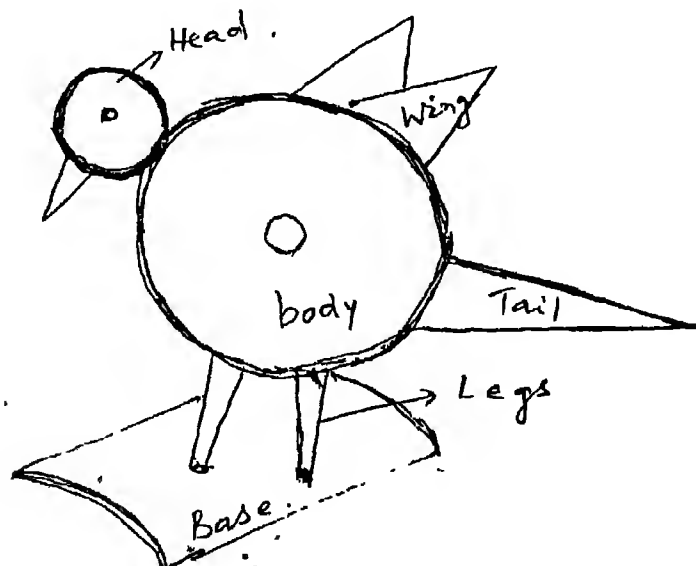
A project for class - IV

Toy Wheel

Skill: Cutting, drilling, use of Rasp file.

Procedure:
1) Select a straight bamboo having dia 4 cm.
2). Cut it with one end having joint & other end without joint.
3) Take a flat piece of bamboo and make a hole just in the centre. Two ends of bamboo piece must be half rounded with the help of Rasp file. (Fig. B)
4) A rod must be prepared with a bamboo piece with Rasp file.
5) The above rod will be inserted in the hole made on piece 'B'.
6) On the piece 'A' make a hole and insert a thread.
7) The thread will come out in one end of piece 'A' and coil in the rod.
8) Now pull the thread from out side, so that the 'B' piece will rotate.

Toy Wheel
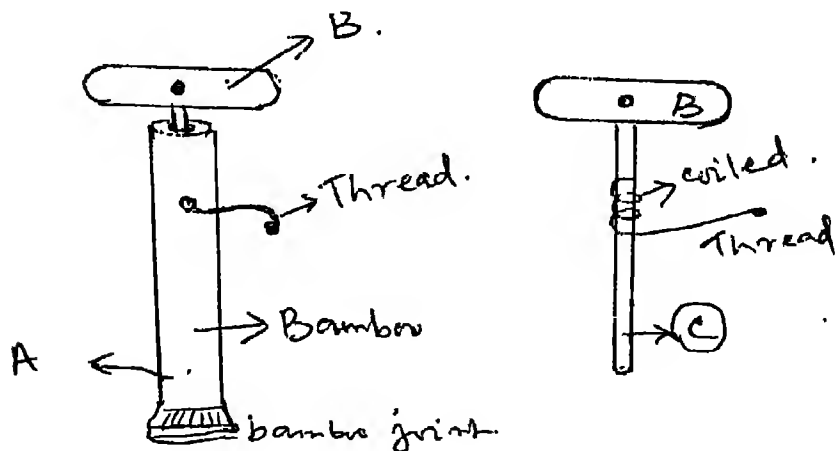
Growing plants in Pots

Growing of plants in pots is one of the effective means of beautifying a garden. Pot plants are easily handled and removal conveniently to desired places in the garden for the purpose of decoration. In times of water scarcity a good number of plants can be grown in pots than in the ground. Though potting is an interesting operation, it requires a certain degree of skill and practice to do it in the right way.

Pots are made of burnt porous clay in various sizes, to provide the required amount of soil and root space to different kinds and sizes of plants. Usually, the vertical height of the pot is the same as the internal diameter at the top. Pot sizes vary from 2 inches to 18 inches. Small pots up to six inches should have a hole at the bottom, larger pots should have one or two more holes according to size. Normally 6 inch pots are the most favoured for growing well rooted cuttings of several kind of plants and small plants of all kinds. Pots of special sizes and shapes are used for special purposes.

The first essential of good potting is the provision for efficient drainage. The water supplied to the plant should pass out of the pot after wetting the soil through. It should not be allowed to stagnate in the pot around about the roots. for this purpose crocks (i.e. pieces of broken pot or stones) are put against the drain hole. Then the crocks are covered with a larger of coase sand or coconut fibre to prevent fine soil from getting washed down into the drainage material and clogging it, so that 1/4th depth of the pot will be filled up by crocks and sand.

After the pot is thus filled with crocks and sand, well rotten compost is put to fill the entire pot leaving 1 - 1½ inch space at the top. Fine sand is sprinkled on the soil.

The plant that is to be put on pot, is held in the centre and its roots are carefully distributed round the centre, fine sand is again sprinkled on the roots covering them, then compost is put all round press the soil a little near the root area. Now the potting is over and the level of the soil is up to the first pair of true leaves.

Soil for the pot plants:

The soil for pot plants, called the "compost" consists of a mixture of earth, manure and other materials which are evenly distributed in it. It is made by mixing 3 buckets of cowdung manure, 1 basket of earth, 1½ basket of sand and 1 basket of leaf-mould.
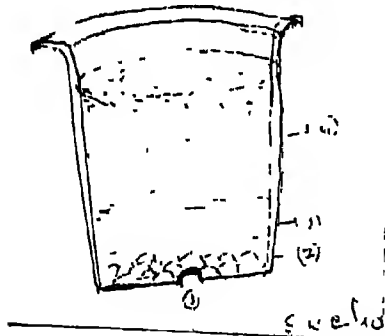
Section of a pot showing soil

(1) - Drain hole
(2) - Crocks
(3) - Sand
(4) - Compost

The entire activity can be done step-wise which are as follow;

<u>Step - I Selection of pot</u>

Size of pots varies from 2 inches to 18 inches. So according to the size and nature of plant, one pot may be selected e.g. for croton plant 9 inch pots are commonly used.

<u>Step - II Cleaning the pot</u>

Keep the new pot in water so that it soaks some amount of water, otherwise it absorbs too much of moisture from the soil preventing the newly potted plant from making any progress. Then clean it which removes remnants of past diseases, fungal spores etc.

<u>Step - III Proper provision for drainage</u>

For proper aeration and good drainage each pot must have atleast one drain hole at the bottom. It is to be checked first. If it is not there then one drainhole is to be made. Then a large crock is to be placed against the drain hole and some more pieces of crocks are to be placed above these overlapping each other. These are then covered over with a large of broken pieces of the size of a pea.

<u>Step - IV Preparation of soil for pot</u>

Prepare right type of soil for filling the pot. Take 3 basket of well rotten cowdung manure and 1 basket of earth + 1½ basket of sand + 1 basket of leaf mould and mix them thoroughly.

Step - V Fill up the pot with sand

After the pot is filled with crocks these are to be covered with a layer of course sand. This layer of crock and sand will be 1/4th of the pot.

Step - VI: Fill up the pot with soil

After the pot is filled with crocks and sand, the above prepared soil is put with its centre elevated to a point, to till the entire pot leaving 1 1/2 inch from the top.

Step - VII: Planting the seedling or cutting

- The plant is held in the centre and its roots are carefully distributed round the conically shaped soil, fine sand is again sprinkled on the roots, then compost is put all round, gently firming it till 1/2 inch of space is left on the top.

Activity for class-V/VI

<u>Project No. 1:</u>

1)   <u>Name of the project</u>:- Lighting a Bulb with Battery
                               source

2)   <u>Objective:</u>   **1)** Forming an electric-circuit and
                              reading of diagram.

                     ii) Identification of Insulators,
                       conductors and parts used.

                     iii) Study of polarity

3)   <u>Required Materials:</u>   <u>Tools</u>

      i) Matyonite/Fibre Board - 8" X 4"   (1) Mini Tool Kit

    ii) S.C. Bulb with Holder 3V/4 Amp.

   iii) P.V.C. Flexible (coloured)
        with crocodile - clips at both
        end - 1' long = 2 pcs.

    iv) Battery (UM - 2U) - 2 pcs.

     v) Brass'L' strips as Battery
        clamps - 4 pcs.

    vi) Steel Screw (3/8") = 6 pcs.

4)   <u>Circuit Diagram/sketch</u>
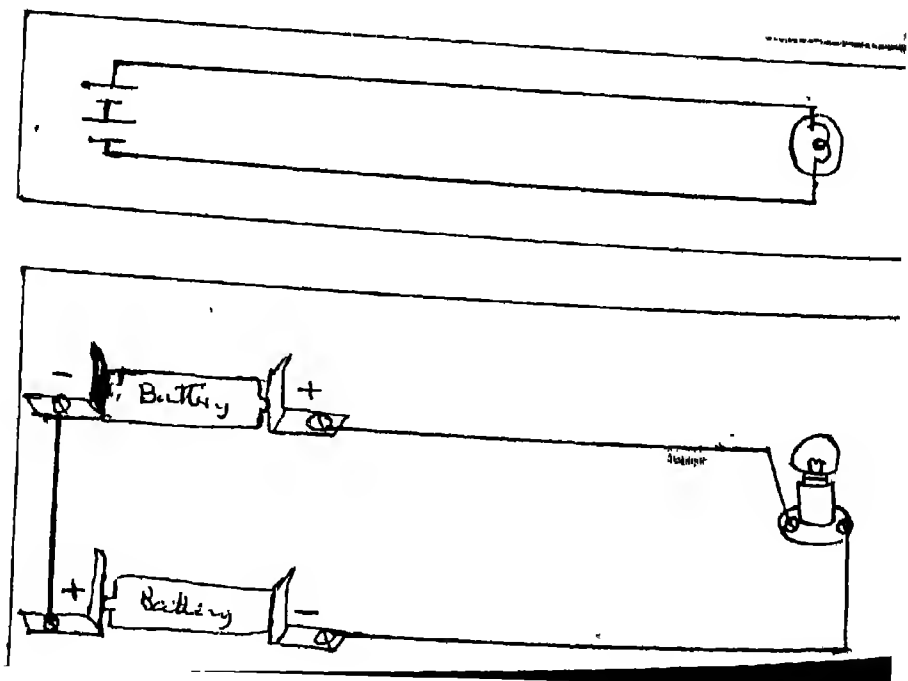
5) Procedure:

    i) Fix the 'L' strips (4.nos) and the Bulb-Holder on the Board by Drilling and Screwing.

    ii) Connect the clipped wires as shown in the diagram.

6) Observation:

    i) Remove one Battery from its clamp and observe the effects.

    ii) Join the Battery removed 'L' strips with another piece of wire and see the intensity of light.

7) Precaution:

Ensure the perfect contact of Battery with 'L' strips and Bulb with Holder.

8) Development:

Plan for adding a switch in the same circuit.

Project No. - 2

1) <u>Name of the project</u>: Using a switch in the project No.1

2) Objective:- (i) Identification and Function of one-way switch.

   (ii) Necessity of a switch in a circuit.

3) <u>Required Materials</u>   <u>Tools</u>
   1) Same as Project - 1   1) Mini Tool Kit
   2) One-way (Toggle) switch-1
   3) P.V.C. wire with clips - 1
   4) Clamp for switch - 2

4) <u>Circuit Diagram/Sketch</u>
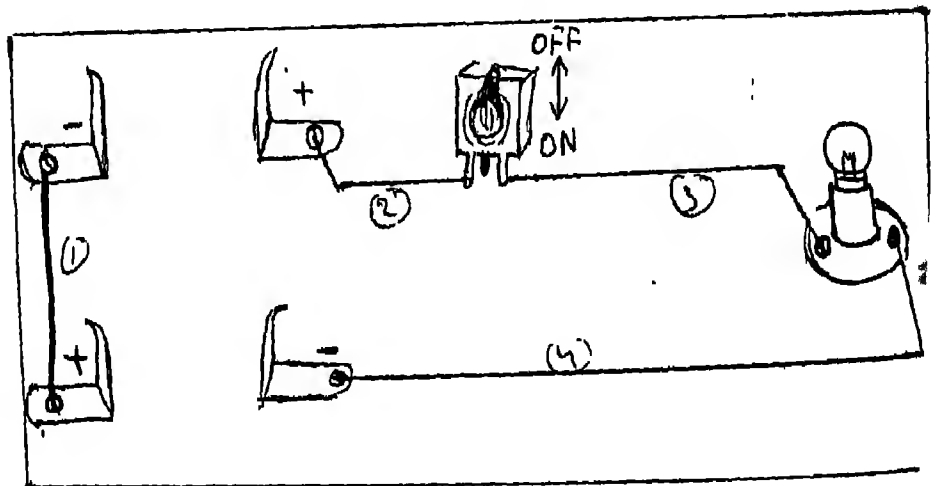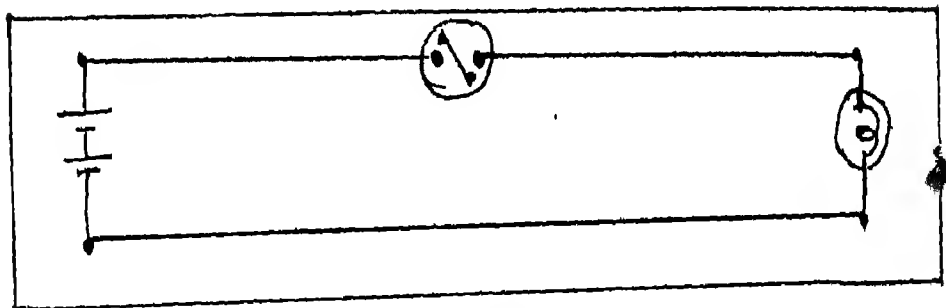
5) <u>Procedure</u>

    i) Fix the switch (fitted with the clamp) on the
       board, by drilling and screwing.

   ii) Connect the 4 wires with clips as shown in the
       diagram.

6) <u>Observation</u>

    i) Controlling a lamp with a switch.

   ii) How a switch connects and disconnects the Battery
       (current can not flow through the switch at OFF
       position)

7) <u>Precaution:</u>

    i) Be sure of 'ON' and 'OFF position of the switch.

   ii)

8) <u>Development:</u> Think for controlling a lamp from
                  2 different places.

Project No -- 3

1) Name of the project: Staire-case lighting circuit.

2) Objective: i) Identification of 2 way switches.

ii) Dinesting the flow of current in 2 different paths.

3) Required Materials:	Tools
1) same as project -- 1	1) Mini Tool Kit
2) 2-way switches(Toggle) -- 2 with clamps.	
3) P.V.C. wire with clips at both end -- 6 pcs.	

4) Circuit Diagrams/Sketch
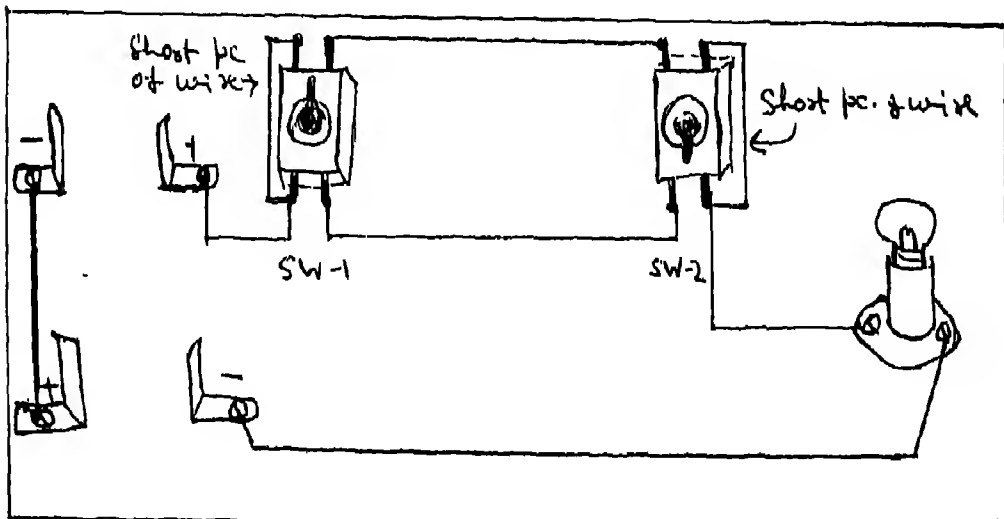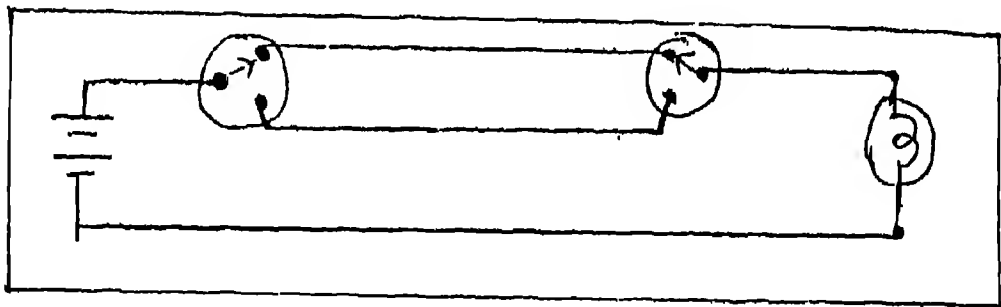
5) <u>Procedure:</u> (i) Fix the 2 nos. of 2-w switches on the
                          Board.

          (ii) connect the 2 terminals (One side) of
                each switch with a short pc. of wire.

          (iii) Connect the circuit with 6 pcs. of
                clipped wires as shown in diagram.

6) <u>Observation:</u> See the effects of light with operations
                    of switches alternatively.

7) <u>Precaution:</u> Connect the common terminals of switch - 1
                    to Battery (+) and the common terminal of
                    switch - 2 to lamp respectively.

8) <u>Suggestion for further work:</u>

          (i) Make a wiring plan of a stair-case
              lighting, placing the lamp on ending
              of stair-case, one 2-way switch at
              ground floor and another switch at
              first floor.

          (ii) Think for, controlling 2 lamps by one
               2-way switch.

Minimum Level of Learning in Environmental Studies
(Science) for Classes I - VIII

Compiled by :Dr.P.K.Durani

Aims :

The module on minimum package content in environmental Sciences aims (i) to foster the acquisition by teachers of knowledge, skills and attitudes useful to teaching about the environment and its problems, (ii) to help develop teaching competencies and (iii) to stimulate initiative in including environmental dimensions in the primary school curriculum. While teaching environmental sciences as a self contained course, the teacher should fulfil the main aims:

1.   that he himself possesses the knowledge, cognitive skills and effective attributes to be imparted to the students at the primary level and

2.   that these acquired attributes fulfil the aims of environmental education.

Objectives:

The specific objectives include:

a)   that educator is acquainted of need, the importance, the goals and guiding principles of environmentaal studies,

b)   that an educator is well acquainted of environmental concepts, realizes the totality of environment as a rational for the use of interdisciplinary approach in school,

c)   to familiarise the teacher and teacher educators with certain activities and experiments related to teaching and teaching of the environmental dimension of the primary school curriculum.

Concepts (Major)

Environment encomparising everything living and non-living objects may be conveniently regarded as an amalgamation of Bio-physical and socio-cultural facts.

The module will treat the content in the Bio-physical facet of environmental sciences under two headings:

1. Biophysical component and

2. Ecosystem interrelationship

Concept 1: Biophysical component includes

a) Physical environment:

Planet earth is one of the nine planets that revolves around an incandescent ball of gaseous star - the Sun. The earth has i) an atmosphere of its own with O_2, N_2 and CO_2 as life sustaining components. ii) a temper ture which can support life, iii) an input of tremendous quantities of energy from sun and iv) the main stay of the basic life sustaining energy conversion reaction .- PHOTOSYNTHESIS which is most important single factor influencing living system.

The earth may be regarded as a 'system' within the 'systems'. The various systems that control the life on earth are (a) abiotic system or physical environment comprised of weather and climate, rocks and soil and (b) biotic components comprised of plants, animals and microbes. All the Abiotic components are highly inter-related and interdependant on the biotic component of the environment.

List, temperature, rainfall and wind are the components of climate:

- Light affects photosynthesis in plants and reproduction in living systems.

- Temperature controls bio-chemical processes, transpiration and evaporation from plant and animal surfaces. We have warm blooded animals (the birds and mammals) with wide range of temperature tolerances and cold blooded animals (Fishes) with narrow range of tolerances. Thus we have Eurythermal (Wider range of temperature tolerances) and stenothermal (narrow range of temperature tolerances) organisms.

- Rainfall and other forms of water like snow, ice, hail, frost, dew (collectively known as precipitation) control the abundance, composition, diversity, distribution and structure of all living organisms. Thus we have desert vegetation, forest vegetation, grasslands, thorns and bushes - all determined by amount and distribution of precipitation per year.

- The direction and intensity of wind controls, size and shape of plants, evapo-transpiration, translocation of particulate matter like dust, sand and pollen and translocation of water vapours from soil and living organisms and waste gases from industrial installations.

- Plants and animals are also greatly influenced by physiographic factors: Physiographic factors include altitude, latitude, longitude and the steepness of the region, nature of the underlying rocks and the extent of weathering and erosion. It should be understood that physiographic factors have implication on temperature and atmospheric pressure, plant and

animal population including man (altitudinal effect), soil building, (Weathering effect) and the stability of soil surfaces, topography etc. (nature of rock effect).

Soil factor includes the nature and type of soil.

Soil texture, porosity, aeration, water holding capacity, micro-organisms and humus content determine the soil factors.

Soil humus deserves a special mention. Dead, animals and plants (litter) under the unfluece of several microscopic organisms (bacteria, fungi, protozoa and macro-organisms (earth-worms, ants mlnts etc.) break down into a morphous black particiculate matter known as 'humus' that ultimately mingles and integrates with soil particles. Further disintegration of 'humus' releases all the minerals tapped in it thus enriching and replenishing the soil with the minerals removed by plants when alive. Humus content also determines physical porosity, water holding capacity, aeration etc.) and chemical (acidity, alkalinity, mineral and nutrient content etc.) characteristic in the soil.

b) **Biological System:**

> Biological system consists of Plants, animals and microbes.

Biological components consists of diverse types of plants, animals and microbes ranging from single celled simple microscopic organisms like Amoeba, Chlorella, Vacteria, to highly complex multi-cellular forms like trees, herbs and shrubs , several algae, edible and poisonous mushrooms, fish, toads, flesh-eating animals like lion and tiger, mamoth elephants and above all man himself. Some of these living organisms are autotrophs (self feeding) like trees of the forests, grasses of grassland,

algae of ponds and all those which possess that unique green pigment which we call chlorophyll with the the help of which solar energy is trapped and simple abiotic or physical components of environment like water and carbon dioxide are converted into complex forms like Glucose, carbohydrates, proteins fats etc. or food. Part of the food manufactured by the green plants by process of photosynthesis is utilized by the manufacturer (green plant) and part of it is shared by all other types of organisms which lack the chlorophyll and are termed as Heterotrophs.

All living organisms with similar habitat requirements tend to occur together and occupy specific areas in the habitant.

Such specific areas are known as 'Niches'. Variety of relationship have evolved amongst the living organisms which include competition between 'similars' and 'disimilars', Prey-predator symbiosis, parasitism, commensalism. Several examples can be cited for each such relationship like competition between two green plants for light, hawk (predator) and snake (Prey); Round worms (Parasite)- man (host); Lichen (a symbiotic association between algae and fungus for mutual benefit). Man, himself is a best example to illustrate the varied type of relationship it develops with physical and biological environment. Inspite of the fact that man is capable of manipulating almost all factors in the environment, it possesses variety of relationships ranging from equal competition to symbiosis.

No organism including man lives in isolation:

All living organisms develop meaningful interrelationship with other organisms on one hand and physical environment on

the other hand thus giving rise to yet another complicated type of interrelationship called as Ecosystem Interrelationship.

2. Ecosystem Interrelationship:

Ecosystem interrelationship involves transfer of food and energy from one living component to another. This relationship starts with the trapping of solar energy by green plants (called as producers) by a process of photosynthesis and its subsequent transfer to herbivores (like rabit) which feed directly on green plants (herbivory) and then to carnivores (like lion, tiger, snake) which feed on the berbivores (carnivory) thus setting a chain of food (Energy) transfer from one feeding level to another level in a systemmatic chain like fashion known as food chain or trophic chain with well marked, levels known as trophic levels. At each trophic level some energy is lost by way of respiration (Metabolism). Therefore, the amount of energy which is passed on to next trophic level decreases. As such no energy is left for recirculation at the last trophic level. Unidirectional and noncyclic flow of energy is fundamental characteristics of all Ecosystems. Apart from Autotroph - Heterotroph, producer-consumer or Producer-Herbivare - Carnivare food chain , there exists another type of food chain in the ecosystem which is called as the detritus food chain which involves the action of several forms of micro-organisms (Bacteria, Fungi, protozoa etc.) collectively called an the decomposers, on dead bodies of producers, herbivores and carnivores. These decay organisms act on dead bodies to nourish themselves and release into the system what is excess for them and thus cause recycling of inorganic nutrients to renew plant and animal population .

Ecosystem may bedefined as any system which involves the interaction between the living a nd non-living . components. This leads to flow of energy which in turn leads to clearly defined trophic structure, biotic diversity and exchange of materials. Within this system of relationships (Ecosystems) several food chains are linked together this forming food webs..Some examples of food chain and food webs may be cited.

<u>On land</u>   <u>Simple food chains</u>

(Green)Producer   -   Grasshopper (herbivore) -Frog-Snake-
                         Peacok (carnivores)

1. Grassplant   -   Rabit   -   Wolf
2. Green Plant   -   Deer   -   Lion
3. Green Plant   -   Goat   -   Man
4. Green Plant   -   Man   -

<u>In Water</u>

1. Green algae - Insect larvae - small fish - Large fish -man
2. Phytoplanton - Crustaceasns - Zooplanktons
                  small fish   - Large fish

Food Web

	Dear	Wolf	
Green Plant	Rabit	Vulture	Lion
	Grasshopper	Frog	Snake · Peacock
	Sheep	Man	

In a balanced ecosystem, competition is such as to keep each section of population at a level at which none is threatened and each can retain its individuality. It, therefore, follows that at each trophic level number of

organisms that can be accomodated is optimum. This number decreases as the trophic level increases from producer level to top carnivare level, thus resulting in a pyramid type of model known as "Pyramid of numbers" which under certain conditions may be inverted also. For example a single large tree sheltering a large number of fruit eating birds and a few birds of prey. Form an inverted Pyramid of numbers.

The total mass of living matter or biomass which can be supported at a given trophic level at a particular time also gets less in natural system as the trophic level increases resulting in a Pyramid of Biomass which at times may be inverted.

The energy content under all circumstances decreases from lower to higher trophic levels resulting alwwys in an erect "Pyramid of Energy". The three types of Pyramids together are known as Ecological Pyramids, diagramatically represented as follows:

Minerals are essential for Ecosystem functioning:

Apart from solar radiation, there are about 22 elements needed to build organic substances by living organisms especially plants. Some of these are needed in large quantities like C, H, O, N, P etc. and are known as

Macronutrients. Some of these are readily available in .
nature in large quantities as C, O, N, ; Several element s
though needed in extremely small quantities (Micro-nutrients)
are scarcely available in nature Co, Zn, Boron, Manganeese
etc.). Majority of these nutrients are made available by
series of cyclic arrangements in nature. The cyclic
movements of the nutrients in the ecosystem constitute
yet another important aspect of Ecosystem interrelationship
and referred to as Bio-Geo-Chemical cycles: They are
catagoriesed into:

1) Hydrological cycle or water cycle: involves the
    exchange of water between oceans, land masses as a
    result of evapo-transpiration and atmosphere as a
    result of precipitation. The balance between evapo-
    transpiration and precipitation in a given region
    determines its fauna and flora.

2) Sedimenteny cycles are exemplified by cycles like
    phospherus and sulphur. A simplified diagram of
    phospherus cycle is shown as follows:

Animals

Plants   Decemposition   Humus

Phosphetc from Soil minse

As a constituent of Protoplasm (nucleic Acid,
phospholipids and numerous phosphorylated compounds),
phospherus is one of nutrients of major importance to
biological systems but of all the nutrients, phosphorus,
perhaps, is the most rare nutrient available only

through the decomposition of phosphete rocks and human.

3) <u>Gaseous Cycles</u> are exemplified by Carbon, Nitrogen and Oxygen cycles. All these have the atmosphere as the major reservoir. These cycles show little or no permanent change in the distribution and abundance of the elements.

<u>Nitrogen cycle</u> involves the convercion of atmospheric N_2 into Nitrites and Nitrates (Nitrification) by Nitrite and Nitrate bacteria), ammonia (ammonification) by ammonifying bacteria and conversion of ammonia, Nitrates and Nitrites into gescous N_2 (denitrification) by denitrifying bacteria. Several types of plants especially members of pea family (^{L}equminosee)directly convert atmospheric N_2 into nitrogen compounds (subsequently incorporated with protoplasm) with the help of symbiotic bacteria like Rhizobium, (recollect root nodules of ^{P}ea) - a process known as Nitrogen fixation. Blue green algae are important in this regard. What appears to be a simple cycle is in fact more extensive, complicated and ordered. It is also highly specific in that certain organisms are able to act only in certain phases of the cycle.

<u>Carbon cycle</u> is perhaps the simplest of all nutrient cycles and is essentially a perfect cycle in that carbon is returned to the environment about as fast as it is removed. This basic movement of carbon is from the atmospheric reservoir to producers to consumers and from both these groups to decomposers and thence back to reservoir. It should, however be mentioned that oceans hold more than 50 times greater CO_2 than the atmosphere and there is a constant exchange of CO_2 from atmosphere to the oceanic reservoir. In past few decades increased use and

incomplete combustion of fossil fuels has resulted
in detectable increase of atmospheric carbon; The
prediction is for a 25% increase in atmospheric
CO_2 by the end of century. What the long term effects
will be of such an increase or of further increase is a
matter of considerable and immediate concern which needs
to be discussed in detail.

In the natural undistrubed state these cycles will
continue to operate continuously so that a sufficiency
of the materials they circulate is ensured.

Nature has enough to fulfil man's need. But at
'sent man works for his 'greed'. He has converted forest pre-
of magnificient trees into forests of 'concrete'. Man has
constricted water ways and erected dams and reservoirs.
He has chocked the streams and filled all possible water
bodies with any fish that can swim. In the name of
cultural and industrial revolution man has invented
polluted culture, polluted political system and polluted
environment. We are slapping the nature so mercilessly
and robbing its natural resources so brutally that we
have the current idiom "the world's ills involve three
'P'S - Pollution, Population, and Poverty'. It is
imperative, therefore, for a teacher and teacher
educator to understand these problems and bring about
the message in clear and in an unambiguous tone that
constant misuse of nature will 'boomrang'. That
pollution has been a concomitant of man's existence as
have the effects of population growth; that the status
of these problems is to be determined by their urgency
and immediacy. A swollen stream, for example, does not
await the training of Engineers who is turn construct
dams and diverge waterways. It warrants an immediate
convergence of sandbags on the stream banks. With the

flood crest passed, the sandbags may remain for sometime
as a grim reminder of a torturous experience but most
likely soon begin gradually to fall into disorder. The
immediate problem of the flood is resolved, but the
long-range problem of managing water resource is not,
for it could happen again. What has this to do with the
ecologist ? Simply that i mediate problems can be solved,
like stopping the discharge of industrial acid into a
stream that serves as a source of potable water for
community downstream. The long-range problems of learning
how to cope with the by products of man's biology and
culture require infinitely more patience and tune, and
training and experience. Much more can be suggested
regarding the content area in environmental sciences
but to achieve the primary aim of teaching environmental
education, the teacher should know hoe to manage the
content area in the classroom especially at Primary level.
How the knowledge about environmental education must be
selected, adapted, and modified for the primary-level
student and how it can be included in the curriculum.
Because the primary level teacher is usually a generalist.
The infusion method seems an obvious choice for teaching
at this level. The goals of the teaching should be
concerned mainly with attitude formation through awareness,
appreciation and acation. The child at the primary level,
should develop a sense of his own position in the total
environment and be aware of the effect of environment on
him and of the effect of his own actions on the environment.
At the end of primary schooling, the child should have
reached a basic level of what might be called "environmental
literacy". Environmentally literate person has acquired of
life style which is environmentally appropriate in the sense
that this life style allows the environment to function as a
life support system in the total ecosystem.

: Minimum Level of Learning in Environmental
  Studies (Science)

S. Bhattacharya

Overview:

There has been over time many attempts to improve the curriculum at all level. At the Primary level (Classes I-V). Environmental studies was introduced. However, no hew curriculum is successful unless its expected learning outcomes/objectives are achieved. Sadly enough the stress was on teaching and not on learning. The teachers felt that once they had finished teaching the textbook their job was over. No attempt was made to evaluate how much was actually learnt.

The National Policy on Education 1986 took a fresh view of the situation and stated that "Minimum levels of learning will be laid down for each stage of education".

In this module an attempt has been made to explain what is meant by minimum level learning and how to achieve it using examples from environmental studies (Science).

Objectives

·After having completed this module the teacher will be able to:

- State the objectives of environmental studies.
- explain what is understood by minimum level of understanding.
- devise strategies to achieve minimum level of learning.
- evaluate whether minimum levels have been achieved.

What is minimal level of learning:

A curriculum is devised with certain objectives in mind. It is the role of the teacher to achieve these objectives through different teaching learning strategies. How far the objectives have been achieved can be evaluated. If 100% of the class has achieved the objective, the teacher has been very

successful. But it is rare to achieve this in case of all
objectives. Usually a large number does not attain all the
objectives. But it is necessary that a minimum level is attained
in terms of competencies - cognutive and pschymotor skills. In
order to identify the minimum level each topic has to be
analysed keeping in view overall objectives at that stage, the
specific objectives of the particulars class,All the learning
outcomes of the particular topic has to be noted. Then the
minimum learning level has to be identified by a group of
teachers. The teachers are then expected to the topic with a view
that all students must attain the minimum level,·however as far
as possible all the learning outcomes should be attained.

In order to determine the minimum level of learning in
Environmental studies (Science) it is necessary to identify
the objectives both general and specific which will enable
one to identify the minimum level to be achieved by a student,
completing five years of primary school.

Objectives of Environmental Studies for the Primary level:

1.0   OBSERVATION: The development of the ability in children to
       implore the world around them with a specific purpose,
       recognise and identify objects   so as to find relationships
       between new and observed facts using all their senses.
       (This process does inculcate a sense of personal satis-
       faction in knowing and exploring the environment through
       direct experience).
       The pupil

       1.1   recognises the properties of objects and phenomena
              using the senses of sight, sound, taste, smell and
              touch.
       1.2   recalls the properties of objects from previous
              experiences.
       1.3   identifies objects, events and changes occurring in
              the environment.

1.4 distinguishes objects on the basis of their
properties, and develops a habit of nothing minute
differences in the properties of objects and
phenomena.

1.5 voluntarily seeks new information about the physical
and social environment.

1.6. develops curiosity to see new objects of the
environment.

2.0 CLASSIFICATION: The development of the ability in
children to discriminate order, arrange, give sequence,
observe events using given or chosen criteria in order
to compare phenomenon. This process develops an awareness
of the diversity of systems and the importance of ordering
and interpreting phenomena.

The pupil

2.1 describes differences between objects and phenomena
on the basis of given or chosen criteria.

2.2. distinguishes between objects and phenomena on the
basis of similarity and differences.

2.3 orders objects on the basis of one or more criteria.

2.4 identifies and names properties which could serve
as the basis for classification.

2.5 appreciates that there are several different ways to
group objects and events.

3.0 COUNTING AND MEASUREMENT: The development of the
ability in children to identify the purpose of measurement;
to select which type of measurement would serve the purpose
and how the measurement is to be taken and recorded in
order to make inferences about relationship between
variables in the environment.

The pupil

3.1 identifies sets and their members.

3.2 compares areas and masses of different shapes and sizes.

3.3 demonstrates measurement of length, area, volume, time, temperature and volume using relevant instruments.

3.4 orders numbers.

3.5 determines number relationships.

3.6 distinguishes differences between estimation and measurement of objects and phenomena.

3.7 selects situations when measurement and estimation are to be used for determining length, weight, area, distance, size, etc.

3.8 compares measures and makes inferences about the variables.

3.9 designs tables for recording data.

3.10 prefers to be accurate in measurement.

3.11 appreciates the need to measure for interpreting relationships between phenomena.

4.0 USE OF SPACE-TIME RELATIONSHIP: The development of the ability in children to identify the relationship in the social and physical environment between movement and time and the changes that occur in time and over space of social and physical processes.

The pupil

4.1 recognises specified objects in relation to other objects.

4.2 identified direction and movement of objects in space.

4.3 interprets trends and the changes of environmental phenomena over space and in time.

4.4. compares changes in the spatial position and relationships between physical and social phenomena over time.

4.5. develops tentative generalizations to explain changes of social and physical phenomena over space and in time.

4.6 appreciates the dynamic nature of natural and social systems; develops awareness of the diversity and constant change of social and physical processes.

5.0 EXPERIMENTATION AND INVESTIGATION: The development of the ability in children to pose questions which require investigation, suggest, and use procedures to collect data, organise and interpret data to derive generalizations. Considering the stage of development of the child, the experiments would range from simple to complex.

The pupil

5.1 poses questions and identifies problems which are likely to be answered by investigation and experiments.

5.2 suggests possible or tentative conclusions.

5.3 establishes possible relationships between variables.

5.4 constructs and/or assembles relevant apparatus for experimentation.

5.5. prepares appropriate tools for investigation.

5.6 conduct experiments and investigations systematically.

5.7 shows perseverance in undertaking experiments and investigations.

5.8 skilfully manipulates instruments.

5.9 obeys safety regulations.

5.10 voluntarily undertakes care and maintenance of tools, materials and living things.

5.11 practises honesty in reporting results.

6.0 ANALYSIS AND INTERPRETATION: The development of the ability in children to identify the relationships between variables, to infer cause effect relationships and to deduce conclusions derived by investigation and experimentation.

The pupil

6.1 organises data efficiently.

6.2 recognises central themes/issues and assumptions.

6.3 compares trends and patterns of observed phenomena.

6.4 infers relationships between phenomena.

6.5 establishes relationship between variables.

6.6. suspends judgements till adequate data is available.

6.7 forms a habit of systematic enquiry.

7.0 GENERALISATION AND PREDICTION: The development of the ability in children to formulate generalizations, draw conclusions, verify facts and predict consequences on the basis of analysis and interpretation. The appreciation of using enquiry to form hypotheses and critical judgement of evidences is an outcome of this process.

The pupil

7.1. deduces relationships between variables.

7.2 verifies conclusions with further evidence.

7.3 extrapolates trends/implications, assumptions based on obtained data and previous knowledge.

7.4 derives principles on the basis of relationships between variables.

7.5 appreciates the need to revise opinions on the basis of newly available facts.

7.6 supports ideas and arguments with sound and logical arguments.

8.0 COMMUNICATION: The development of the ability in children to express through writing, speech and action, relevant observations, conclusions and arguments. The requisite skills to understand and use information through the

development of the skills to read, listen, see and locate information effectively is an expected outcome of this process.

The pupil

8.1 uses relevant new words, sounds, actions, tools and instruments correctly.

8.2 translates observations, conclusions into suitable means of expression.

8.3 precisely describes objects, phenomena, trends, experiments, procedures through words, sounds, drawing, writing and demonstration.

8.4 locates relevant sources of information from the environment.

8.5 voluntarily participates in group activities.

8.6 willingly shares ideas and accepts arguments and ideas of others.

Determining the minimum level of learning:

These objectives of environmental studies can all be achieved through the teaching of the science component of the environmental studies. Take for example the topic about "Plants around us" which is generally taught in class-III. This topic course the following concepts.

a) There are living and non-living things around us.

b) Plants and animals are living things.

c) Plants have different parts.

d) Man often uses seeds to grow new plants

e) Man uses plants in different wasys

Objectives of teaching this chapter are:

The pupils will be able to:

a) Observe:

i) different types of plants and animals in the locality.

ii) that plants have different parts - root, shoot, stem, leaf, flower, fruit and seeds.

iii) that seeds germinate into seedlings.

iv) that different   vegetables and fruits are
available at different times.

Classify:

i) living and non-living things

ii) plants and animals

iii) plants on the basis size, shape, utility, growth
requirements.

Use numbers:

i) to count the numbers of various parts of the plants

Measure:

i) the height of plants using scale/-tape/string/rod et

ii) nursery beds, distance for sow-ing seeds,
transplanting seeds.

Use space time relationship

i) to compare the changes in growth of plants over
a particular period of time/reason.

ii) perceive objects in relation to other objects like
butterflies and bees during flowering, or plants
that invariably grew near the water or fruits and
vegetables that come in the same season.

Communicate

i) through oral and written descriptions what they
observe,

ii) through drawings of what they observe.

iii) Displays/exhibitions of plants and plant parts
collected by them,

iv) rhymes, songs, stories, gestures, imitations.

Experiment/Investigate:

i) how seeds germinate to form seedlings

ii) conditions necessary for germination

iii) the same type of seeds gives rise to the same type
of plant.

h) Generalize:

    i) that plants and animals are living things.

    ii) the plants have some common features.

    iii) seeds develop into plants...

i) Develop:

    i) an appreciation for the variety of living things around them.

    ii) interest in physical and natural environments

    iii) a sympathetic attitude towards living things.

Having spelt out the objectives it is quite apparent that all the students will not achieve all the objectives but in any situation a minimum level has to be achieved. The next step is to identify the minimum level of learning. In this above example, one may say objectives (e) and (i) may not come under minimum level. The last step is to devise evaluation tools based on the teaching-learning strateges adopted which will indicate how far each specific objective has been achieved. This includes changes in behaviour also.

The evaluation may be by oral or written test covering all the outcomes. Some questions are suggested below which give different levels of difficulties, and test different objectives.

    1. Name five plants in your locality. (Ob.(a)(b)(f)

    2. Draw a diagram of a plant and label its part (Ob,(a)(f))

    3. Group the vegetables named below into the reasons in which they are available Tomato, brinjal, beans, pea, cauliflower, cabbage, pumpkin, ground   (Ob(a)(b)(e)

    4. Fill in the blanks   (Ob(a) (h)

        a) Plants have _____ growing into the soil

        b) Seeds are found inside _____

        c) Plants are generally _____ in colour.

In addition the teacher should prepare a check list to evaluate a child's ability to conduct experiments and investigations. An example is given below:

CHECK LIST:

Tick the one that is relevant to the child.

i)	Handles the materials carefully	Yes/No
ii)	Makes careful observations	Yes/No
iii)	Records observations properly	Yes/No
iv)	Reaches conclusions cautiously	Yes/No
v)	Reports findings honestly	Yes/No

This checklist can be extended and modified to suit specific experiments/investigations.

In addition to the above there are certain attitudinal changes that are to be achieved. These can only be evaluated. These can only be evaluated at this level by the teacher by observation and recording, e.g., does the child (a) voluntarily participate in group activities, (b) willing to share ideas and accepts arguments of others (c) shows respect towards living things (d) does not unecessarily pick flowers or destroy plants.

Having evaluated the learning outcomes the teacher will be in a position to judge how far each objective has been achieved. It may be that many of the objectives will be totally achieved, while some others may be achieved by 90% of the students and others by still less number of children. The minimum level of learning requires that questions pertaining to the minimum level be answered correctly by all the students while they may or may not be able to answer those above the minimum.

It is once again emphasised that the minimum level is in terms of individual pupils attaining the minimum learning objectives.

Activity - 1

Select a topic/chapter from environmental studies (Science) and identify the concepts to be covered.

Define the specific objectives based on the general objectives given on page........ of this module.

Outline activities and teaching learning strategies.

- Identify the minimum level expected from pupils.

Devise evaluation items/checklists/for the objectives outlined earlier in order to determine whether the minimum learning outcomes had been achieved.

In case the learning outcomes have not been achieved by a substantial number the teacher has to develop alternate teaching learning strategies.

Activity - 2

Select one objective from activity 1 and devise alternate strategies which will help reinforce the learning already achieved Design an alternate bur equivalent test to whether the objective has been achieved.

In case only a few students fail to reach the minimum level, special attention has to be given to these students so that they achieve the minimum level.

Activity - 3

Outline a few remedial activities which may help a student achieve minimum level if he has achieved a few of the above mentioned (Activity - 1) learning objectives.

Module 15 Child centred Approach/Activity Based Approach

Objectives: The module on Child Centred Approach helps the reader to :

- Over view the prevailing practices in education;

- understand the meaning of child centred approach in education;

- know the basis of child centred approach;
- be acquainted with the essentials for practising child centred approach;
- illustrate child centred approach with examples,

Contents:_ Prevailing practices in Education.

- Child centred approach.
- Fundamentals of child centred Approach
- Requirements.
- Examples.

Duration : One hour

Mode of transmission: Discussion and participation of participants.

Prevailing practices in Education.

In the prevailing system of education whatsoever happens, it is determined by authority in its own right. The authority may be vested in Govt. or delegated to the departments of education or with some body else but teachers and taughts are the least authorised individuals to set the scheme of things in educaton. Teacher organizes teaching as he is ordained from above. The student is but to enable himself to act as an obedient student to learn what he is made to learn by approved methods of teaching. This all accounts for rendering present system of education as an authority centred education.

Authority centred approach.has come to manifest its
inability to deliver the desired results. It has failed to
deliver the kind of man power to the society for which it
has been specifically structured. The system of education
of the day, cannot claim to supply from its schools and
institutions of learning, children as responsible citizens,
keen learners, sincere workers and fine persons.

National Policy on Education (1986) has taken note
of it. In its programme of Action (1986,p.13), it has been
emphasised that:

> "By making elementary education child-centred,
> we would be introducing a long-awaited reform in
> the system. The most important aspect of this reform
> will be to make education a joyful, inventive and
> satisfying learning activity rather than a system
> of rote and cheerless authoritarian instruction."

Child centred approach:

Education is inherently a child centred process. It is
organized for the desirable and healthy allround growth and
development of one and all children. It evolves itself as per
the requirements of the growth and developmental needs of child-
ren.

Child centred approach in education draws its sustenance
from needs, abilities, aptitudes and aspiration of children.
In this system, teachers conduct themselves as group leaders
and fascilitators of learning for children. The entire spectrum
of activities is child centred approach is made to fit and be
useful for the allround development of each and every child.

In child centred approach, Education becomes practi-
cally an entirely a child-show. In this approach, child is
a pivot around which the process of education revolves.

In child based education, child is not left at the disposal of education rather the otherway around, the system of education itself is placed at the service of each and every child.

Fundamentals of Child Centred Approach.

Child centred approach in education is based upon the fundamental tenants of the process of education:

- education means allround drawing out of the best in child and man body, mind and spirit(Gandhiji).
- each and every child is a child who is considered to be capable of developing his potentialities and overcoming his limitations at his own (Rogers).
- each and every child is a unique and worthwhile child who should be respected for his inter-intra individual differences.
- each and every child needs a guide to guide him, fascilitate him to develop his allround personality in a healthy and desired direction.
- children as human beings have an inherent desire and need for achieving self realization to establish themselves as perfectly perfect, competent and useful individuals members of the society they are born in.

Child centred approach in education is an approach in education which while accepting the given unique individuality of the child as a worthwhile useful personality, it assists him emplore his assets and develop them to enable himself to establish himself as an individually satisfying and socially useful individual.

In child centred education, the child is welcome, motivated and encouraged to play a participant role with

his teachers to build up his programme of learning. In this strategy, nothing is supposed to be imposed upon the child a-s a passive learner. In popular parlance, education is considered to be the twin process of teaching and learning. For teaching, teachers are made accountable and for learning learners are held responsible. But it is in the scheme of things in child centred approach in education, teachers and pupils are considered equally answerable to the net results of teaching and learning, students coming out of the process of education with the allround development of their respective individualities.

Children are identified with the process of education in child centred approach. A programme of learning is arrived at with the perfect understanding of the developmental needs of children. And this design of education is conducted through activity based approach in which the children themselves are actively involved in their learning whole, virtually playing their childhood in a most congenial teaching learning situation.

In child-centred education, the teacher is not supposed to assume the role of a 'master' of the children but he acts, like a friend, guide and a philosopher in their learning. The school provides a liberal atmosphere in which teachers and pupils enter into a phonomenon of healthy human interaction for the education of citizens of tomorrow. Teacher as a group leader of students in child centred practices in education is considered to be a fascilitator of their learning.

The teachers in child centred approach begin with their work with a thorough understanding of each and every child. The home conditions of children, their parents'

socio-economic status and educational status is very important
to know to understand the children. All the more, students
physical health especially their being free from any disability
in learning because of any deficiency in learning, seeing, talking
and walking have to be taken note of. Students' intellectual
development, their aptitudes and attitudes, habits and temp-
raments are needed to be known by the teachers teaching them.
The maintainance of cumulative record of each and every child
goes a long way to help the teachers in this direction.
Actually teachers following child centred approach do maintain
an up-to-date cumulative record of their children. This record
goes to highlight the achievement of students, their failures
and gives an understanding of their developmental requirements.
It may be said that progressively maintained and insightfully
interpreted cumulative records of children lay the foundations
of a child centred approach in education.

What is needed is, in whatever way the child shows his
talents, he should be given full opportunity to develop them
while the knowledge of his limitations is required to be accepted
as a fact for which the child should never be taken to task
for nothing. There is nothing to be ambitious for the growth
and development of any child. His limitations should be appre-
ciated and his developmental perspectives should be acknowledged.

Teachers having known the children on all accounts for
their individual differences are well set to follow child
centre approach in their teaching. In this approach if it is
to be effectively pursued, there is a need to keep pupil-teacher
ratio at a reasonable level. A high ratio between teacher and
pupils does not permit the teacher to follow child centred
approach very strictly.

In child centred approach teachers need be given a
good amount of freedom to practise their own well perceived

styles of conducting themselves with children. This should be left to the best of the judgement of teachers themselves as to how they should enlist the active and willing participation of students in the process of their education.

The courses of studies or the curriculum to be followed in the child centred approach needs to be flexible. Teachers should be given a chance for their association in the development of programme of education of children. Teachers should be given a bit of freedom to make the choice of curriculum to be followed with a particular set of students to follow child centred approach in its real sense of the word.

Child centred approach works as activity based approach. This approach needs a good amount of teaching aids along with the space in which demonstration work can be taken. That way infra-structure of the school is required to be kept up to the mark.

Child centred approach is an insightful approach on the part of teachers. That way teachers who are expected to follow the approach should be basically professionally trained and personally wedded to the teaching profession. Teachers cherishing no love for children or for the teaching profession can hardly be imagined to purse child centred approach in their styles of functioning as teachers. Teachers of commitment, dedication and of a mission in teaching profession towards the children can only be seen coming forward to practise child centred approach in education.

Child centred approach is a painstaking approach in pedagogy. Teachers need be well motivated to purse this approach. In schools, men of sound mental health and

professional competency can only pursue this child
centred approach.

Examples :

    a. Maintaince of school complex.

Maintaince of school complex, keeping the surroundings
neat and clean is very important for an effective process of
education. Towards the achievement of this end in schools,
students' active participation is a must. Not only this,
students involvement in this aspect of their schooling   -
helps us to achieve the very purposes of schooling the children
to a good extent.

A teacher in his guidance can motivate the students
keep their classrooms neat and class. By turn, students
may be expected to clean their rooms to begin with every
early morning. Similarly, decoration of classrooms with
students-prepared charts and diagrams help us to enlist
students participation in their self-education through
activity based approach. Development of small flowercorners
on the available land near by ea ch classroom can also serve us
best to practise this approach. Community work programmes,
social service compaigns in the vicinity of the school
complex help the students in their allround development for
which they come to the school.

An activity based education is the real education
for children. It is very important for running an effective
process of education. The enlightened teachers can find
many ways to practise this approach in their daily working
in schools. Students' involvement in educational activities
can teach them what can't be taught to them in any other way

just by preaching or sermonising the children in schools.

b. <u>Organization of Co-curricular activities</u>:

Co-curricular activities are the playful programmes
in activity based approach in education. These activities
are presumed to be liked by the children. In child centred
approach, these co-curricular activities need to be
systematically planned and designed for the definite purpose
of helping the children for their allround personality
development.

In the organization of co-curricular activities,
teachers should leave much desired to be done for students
themselves. Let the students manifest their initiative, work
over their plans and conduct themselves most freely. They
need not be given too many instructions. However, teachers
must associate themselves with students and with students'
activities with us deep interest. They may suggest them
improvements hithes and thithen to improve upon the things
in the right direction.

Students do accept, expect wise council from their
teachers which should be whole heartedly provided. Students
should be encouraged and patted to undertake the activities
with sincerity of purpose, devotion and active enthusiasm.
Let the students learn by doing as to how to work together
and organise their own learning experiences through the
educational activities. Teachers need be men of child
psychology both in their thoughts and actions to guide
the students in the most desirable ways. They are required
to keep themselves always available to students.

Essentials of personlity can well be inclucated in
students through activity based approach in education.

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C. Classroom Teaching.

Classroom teaching or text-book educational should not be merely a spoon feeding activity. Students should be helped to develop self study habits. Classroom teaching should be developed with an active involvement of students. Teaching of a lesson should not be merely a delivery process from one end of the teacher to the other end of the students. On the basis of previous knowledge of the lesson, the lesson should be developed from known to unknown. Teacher should add to the previous knowledge of students in a very smooth way. Child centred approach provides a playful way of teaching the children.

Illustration: I. Introduction of Multipication at the primary stage.

Yes, it is supposed that at the stage of learning multipication tables, students know addition and substration. We may write on the black board in sequence:

```
  2     2     2     2     2      2
 +2    +2    +2    +2    +2     +2
 (I)   +2    +2    +2    +2     +2
      (II)   +2    +2    +2     +2
            (III)  +2    +2     +2
                  (IV)   +2     +2
                        (V)    (VI)    (VII)  (VIII)  (IX)
```

Students will be invited to come on the black board and add these figures. A stage may be brought by the teachers when he should ask the students as to how it is possible if we have to add 2 for 20 times or more. At this stage concept of multipication tables may be introduced. It may be said

that 2 has been counted twice, thrice four times and so on.
In arithmatic this type of exercise is said to be 2 multiplied
by 2,3,4 and so on. We can simply write the alove writings as:

$$2x2, \quad 2x3, \quad 2x4, \quad 2x5, \quad 2x6, \quad 2x7 \; - \; - \; -$$

x - is the sign of multipication in contrast to
+ being the sign of addition.

$$2 \times 2 = 4$$
$$2 \times 3 = 6$$
$$2 \times 4 = 8$$
$$2 \times 5 = 10$$ - so on. This is known as multipication
table of 2 and 2 x 1, means 2 has been added only once,
2 x 2 means, 2 has been added twice and so on. Similarly
we have

```
3    3    3    3    3    3
     +3   +3   +3   +3   +3
          +3   +3   +3   +3
               +3   +3   +3
                    +3   +3
                         +3
```

This is to say that 3 has been added once, twice, and
so on. This is a multipication table of 3 which may be
written as

3 x 1	3 x 2	3 x 3	3 x 4	3 x 5	3 x 6
=	=	=	=	=	=
3	6	9	12	15	18

After giving them this practice, let us see some
students may develop the multipication Tables of 4,5 etc.
If not let us help them develop these tables and remember them.

Students should be encouraged to help in learning. Students who learn fast should come to assit the students who take little bit more time to learn. None of them should be allowed to develop superiority or inferoirity complex. Students who learn slow may play fast and vice cersa. Each one has his own point of merit which should be duly recokoned with. In this way, following child centred approach students are helped to learn bookish knowledge as well as essential personality traits, too.

Illustration II. <u>Language Development</u>.

A language book may not be taught from page to page by reading it out to the students by the teachers. Let the students read where they may be given guidance for correct pronunciation. Let the students improve their prounciation by listening to other classfellows, too. Let the students twll what they understand by what they read. This sort of mutual learning-teaching is the essence of child centred approach in education.

Students telling the stories, singing songs and talks on current topics of interest to one and all should be the activities which should help in the language development of children.

Education trips expose the students to their wider environments. These activities should be associated with the teaching of history of Geography as well as science to the students.

A conscientious teacher who has the conviction in child central approach in education can find many ways to pradise it in his own very natural ways.

Education of First Generation Learners

Dr. S.P.Anand

Objectives: The module on the Education of First Generation learners helps the readers to:

- know who are first generation learners;
- understand the family background of first generation learners;
- understand the need for motivating the first generation learners for learning;
- know the teachers' role in the education of first generation learners;
- be acquainted with the essential teaching-learning strategies for first generation learners,

Content: First generation learners

Family background

Motivation for Education

Teachers' attitude

Education of first Generation learners

Teaching-learning strategies

Duration: One hour

Mode of Transection: Descussion and participation of participants.

First Generation Learners

In the movement of universalization of elementary education of the day, we have come to talk about first generation learners. This concept comes into being when education is recognised to be the fundamental right of each and every child irrespective of his family belongingness. Who are first generation learners ? It needs to be clearly understood to begin with the discussion of their education.

The children belonging to the families who have had never benefitted themselves from any formal or informal system of education for generations together when such like children are brought under and given the advantage of an organized pattern of education for their desired growth and development, these children are identified as first generation learners.

The children of the families who become first in themselves in their own respective illiterate homes to receive education in an organized, formal or informal system of education are recognised as first generation learners.

First generation learners are the children whose none of the family members is found to be educated ever and they happen to be the forerunners for ushering in an rera of education in their families.

Family Background:

First generation learners are essentially the children of illiterate parents who in their entire life time have had never enjoyed any type of systematic education. These parents in their own turn might have remained uneducated because of financial constraints (poverty) of their respective parents who were unable to foot their expenses required in their being educated. It might be that social practices and rituals of their times along with their family traditions had not permitted them to avail of the school facilities available to them in their school going ages. Leaving aside these pertinent barriers, it can also be said that parents of first generation learners could not get education because they had been living in far flung areas cut off from the mainstream of social life and they had virtually no access to any organization of learning worth the name.

Generally, the families or parents of first generation learners are known as economically poor, socially disadvantaged and culturally deprived ones. In most of the cases, families from the weaker sections of the community like that of scheduled castes, scheduled tribes and families of other backward classes make the family background of first generation learners.

Motivation for Education:

To begins with, the first generation learners are never the least found to be anyway intrinscially motivated for having any kind of education. Perhaps, otherway round, these children may be found cherishing a sort of apathy towards education. Their parents too have no inclination to send these children to the schools. All the more first generation learners might be discouraged by their parents to cherish any lone for education.

First generation learners as well as their parents have yet to give a deserving place to education in their family culture. It may be that they may be thinking that education is not meant for them and they are not made for each other. All the more, parents of such like children may be having a negative attitude towards schools in their thinking that schools spoil their children. They may hold the opinion that children will become useless if they are sent to schools. Till recently, family practices and traditions of first generation learners are found to the totally against their being educated.

The unhealthy notions about education cherished by illiterate parents may be based upon the fact that their children are also working as wage earners for their families. They add to the net financial earnings of the family. Children as well as parents have an immediate future in sight without any vision for any for remote future. They have no

high ambitions in life. They are very much contended in their own small world with small earnings and a self-contained vision of life as a whole. Their style of life carries no allurement for education at all.

Parents of first generation learners are required to be persuaded to send their children to the schools. They need an awakening for allowing their children to be educated in their own interest as well as in the interest of society as a whole. Parents as well as their children need an assurance of the utility of education in their life. Parents have to be mentally well prepared to send their children to the school as willingly as it may be possible to begin with. This is to enlist the active cooperation of home of first generation learners to affect an effective system of education in their allround personality development.

In most of the cases, first generation learners are wage-earners in the family. They add to the net-income of their families. Parents need to be financially componsated for their children having stopped earning because of their going to the schools. Not only this, the education of first generation learners need be entirely financed by school or some other agency itself. These children need be provided with books, school uniforms and meals free of cost. School should not in any way pose a financial burden on the parents of first generation learners. In some cases besides all this such like children have to be fascilitated to continue to be wage earners along with their going to the schools. They may be allowed to come to the school in their off hours. Or, schools may open earning avanues within the school campus itself along with their formal programme of learning. Vocational education has been accepted to be an essential aspect of the education of first generation learners.

First generation on learners will be well motivated to learn when they are assured of earning while learning which eventually leads them to place themselves in life as better wage earners and respectable members of the society Teachers' Attitude.

School should acept first generation learners ,as potential learners without any sort of prejudice towards them. Teachers should accept them with a positive attitude towards them and on their part rassure them a loving and affectionate treatment. In any case, teachers should never the least consider or brand first generation learners as second grade learners. There should not be in anyway discrimination between first generation learners and their peer group at the hands of their teachers.

The unique individuality of each and every first generation learner needs to be recognised and respected by the school which matters a lot for these learners to come to the school, stay there and have the benefit of schooling for their healthy allround personality development.

Teachers of first generation learners for their effectiveness to be established in teaching these children successfully have to develop a personal equation with them. Personal relationships between first generation learners and teachers play a fundamental role in their education. And for that teachers have to play a 'senior' role to earn the trust, faith and confidence of first generation learners.

Education:

Education of first generation learners needs to viewed in its true perspectives.

Education is altogether a novel and new experience for the first generation learners as well as for their parents. It is to bring in a cultural revolution in the families of first generation learners. It is accepted in principle, that the

process of education should revolve around the child. It should be designed befitting to the needs, abilities and aspirations of learners. That way, the entire process of education for first generation learners must be designed as per the requirements of these learners. It should be attractive to them. It should be fascinating to them. It should be convissing to the first generation learners that education being processed for them is fundamentally useful to them, it will benefit them a lot in the long run while taking care of their immediate interest. To arrive at such an acceptable pattern of education for the first generation learners, the following salient points may be kept in mind.

First generation learners have no conductive educational atmosphere at home. They have already been deprived of a congenial surroundings at home in the very early but very sensitive age of their development in all its facets. Their cognitive development has already been adversely affected. Improvished learning experiences meted out to them at home have kept them deprived of enlarging their attention span and perceptual attitudes. An illiterate kind of situation at h home has not allowed them to develop basic skills of learning to any extent, their vocabulary span in very much limited, they lack the comprehension pover and lag for behind in their expression as compared to the children belonging to literate families. They have not acquired a natural training for memory, retention and recaptualation. Their exposure to surroundings is confined to a very small area limited to their own family dwelling only. It has not enabled them to learn to make observations and interpretions of their surroundings. As a whole, cognitive development of first generation learners has to be takes as suppressed and depressed one which needs to be given a momentus start for its potential growth and development.

First generation learners need to be attended to for their social development. Before coming to school, they might not have come across a group of their own age-group, friends to stay with, deal with, work with and stay with. Students have to be given a sufficient amount of social training where they can learn how to live together work with a team spirit, share their joys with each other and render a helping hand to one and all as and when so required by anyone. We are basically social human beings living in a vast universe and are dependent on each other in many ways has to be brought home to the first generation learners.

First generation learners are not only deficit in mental and social development but their emotional maturity too may be lagging behind as may be expected for their age. They have yet to learn to play emotions in their day-to-day behaviour. Emotions of love and affections joy and sorrow, fear and anger etc. have to be given a due place in their routine style of life. These learners have to be trained to make appropriate and adequate response reactions to the given situations.

First generation learners in their education are required to be given a reali-stic but a broader view of human life. Human life is a great blessing which should be very keenly nurtured and matured this is that the first generation learners need to understand. And for this all they have to be guided for the development of their well integrated personalities. To achieve this end, their basic human needs are to be satisfied to begin with. The educational programme for first generation learners must be based upon

.our basic concern for the satisfaction of their psycho-
logical needs. They should have a sense of security,recognition
and achievement. They should have sufficient independence to
work independently to initiate their own creative subtle initia-
tive. They need to be helped to identify their own areas of making
merits and wiss recognition from friends, teachers and parents
alike. The satisfaction of these psychological needs will help
first generation learners develop self-confidence and self-
reliance in themselves to make intelligent choice, plans and
adjustments in daily life.

In education, it will be always advisable to pay due
attention to the aforesaid deficit areas of personality
development of first generation learners. In the framework of
curriculum, due consideration should be given to the preparatory
ground to be made before any useful scheme of things in
education could be effectively undertaken for the benefit of
first generation learners. Their education should be guidance
oriented education which should help them in their allround
and integrated personality development.

Teaching-learning Strategies:

For running an effective system of education for the
benefit of the growth and development of first generation
learners, teaching-learning strategies should be based up:

I. Child centred Approach(Activity based Approach)
II. Learning for mastery.

The pedagogy to be followed for the education of first
generation learners should evolve itself by the teachers themse-
lves while teaching the concerned learners. Learners should be

actively associated with the development of educational
programmes for them. Actually, first generation learners
should be helped for self-study and self-learning. Their
personal involvement in their teaching is very much
essential.

First generation learners should be helped, to learn
from their immediate environments. Their thinking and
reasoning faculties of mind should be given a definite
direction by the loving and affectionate treatment towards
these children. Their suppressed cognitive development need
be given an open and liberal opportunity to unfold itself
in its very natural ways. While working together, org-nising
their own playful activities, first generation learners
should be encouraged and fascilitated to initiate their
learning from their well known playway activities. Let
them look at their routine school activities quite
intelligently which will help them broaden their vision
of life and look at the things in more than one ways. All
these well organised child-centred activities in the school
will usher in much awaited era of mental, social, emotional
and physical development in the life of first generation
learners.

To begin with, first generation learners may be
exposed to the outside limits of their immediate environments.
Let them stretch their thinking, broaden their horizon
of life and enlighten themselves with what is happening
around them which had till recently remained absolutely
unknown to them. Excursions, educational tours and outings
organized by the school for the benefit of first generation
learners generates in them a taste and desire for learning
and receiving education for themselves.

Child centred activities and child organised activities
will really go a long way for making first generation learners
as well motivated learners who should have the urge and
enthusiasm to learn.

First generation learners learn only in schools.
Teachers are squarely responsible for their learning.
Teachers may not expect home to play much role in the
learning of first generation learners. Their initial
difficulties, hesitations and hurdles in their learning
need be appreciated by teachers. Teachers should have
appreciation for the invididual differences prevailing
amongst the students. Teachers have to take a keen personal
interest in the successful education of each and everychild.

Learning for mastery a crucial strategy in the
process of learning needs to be pr ctised while programming
the education of first generation learners. Teachers
should plan out their teaching well in advance. No casual
or a haphazard style of teaching should be practised atleast
in the teaching of fist generation learners. Their learning
has to be made quite an interesting exercise for them by
utilizing teaching aids by the teachers. No. such learner
should be expected to take up the second phase of learning
or go to t-he next step of learning a unit till he has fully
mastered the first step at hand. Let each child help the
child who needs more time to learn or more help to learn from
others. Teacher at his end should resort to remedial and
compensatory teaching to enable each and every child to
learn what is taught by him in the school.

Pupil-teacher ratio should be kept reasonably small
so as to enable the teacher reach and every first genera-
tion learner. The teacher in his individualized stretegy
of teaching has to be particular best any child should
develop a feeling of failure in his learning. Learning
of first generation learners has to be a slow process
to begin with which must get mometum as the achievement

level of or rate of learners fislearning improves upon.
Students realization for making a head way in their learning
arguments their real pace of learning. And for this,
teachers have to monitor the progress made by first
generation learners as an essential exercise for them.
Teacher may develop the habit of maintaining an accumulative
record of the progress of learning and their participation
in other activities for one and all first generation
learners.

MULTIPLE CLASS TEACHING

Dr. S.T.V.G. Acharyulu
Prof. & Head, Deptt. of Edn.

This module will enable you to :

- understand the prevalence of single or two teacher schools and their need in the States/UTs of the Eastern region.

- understand the problems associated with Multiple class Teaching.

- understand the advantages of Multiple class Teaching.

- acquaint yourself with the methodologies of curriculum transaction in schools having Multiple class Teaching.

- understand the problems pertaining to teaching-learning process in Multiple class settings.

- acquaint yourself with the techniques of classroom organisation and management in Multiple class situation.

- understand the need for preparation of teachers for Multiple class teaching-preservice and inservice.

- acquaint yourself with the strategies of effective supervision of schools practicing Multiple class teaching.

The single or two teacher school in India is not a new phenomena. Such schools existed in ancient India. From the vedic period to modern times they have continued their existence in some form or other. With the advent of Independence and the constitutional provision for the universal compulsory education of all children in the age group 6-14 years, single teacher schools were established in some of the

remote and difficult forest and mountain terrains, island
habitats and other inaccessible regions of the country.

Why Single or Two Teacher Schools ?

Inspite of persistent efforts, primary schools could
not be provided in all the 9,64,664 rural habitations in our
country. There are still as many as 1,90,666 (19.77%) rural
habitations which do not have a school within a walking
distance of one kilometer from the homes of children. In these
sparsely populated areas it is not feasible to provide primary
schools with several teachers. Although the single or the two
teacher school is not the desired pattern, these have been
established in the low density population areas. Whenever
the population is low, there will be fewer children of any ,
particular school going age and consequently, the total
number of children needing primary education would be rather
small. In such situations, the single or two teacher school
continues to be the only alternative.

It is necessary to keep in mind that in most countries
of the world, single teacher schools do exist. It is not
uncommon to find such schools in U.S.A., U.K., U.S.S.R.,
Canada, France, Germany and other European, African and Arab
countries. In short, in most countries having habitats with
a population of less than 300 or so there have been single
teacher schools which cater to the primary education needs
of children and in many countries they still continue to
function.

Prevalence of Schools with Single or Two
Teachers in the Eastern Region

In our country out of a total of 529392 primary schools,
148033 (27.96%) are single teacher schools 171389 (32.38%) are
two teacher schools, 80365 (15.18%) are three teacher schools,
47188 (8.91%) are four teacher schools and 79789 (15.07%)
five or more teacher schools. Table No.1 gives the state
wise distribution of such schools in the Eastern region.

Table 1

Primary Schools in the Eastern Region with
single, two, three, four and five or more teacher

Sl. No.	State/ Union Territory	No. of Teachers in the Primary Schools						Total
		Zero	Single	Two	Three	Four	Five & above	
1.	Arunachal Pradesh	4 (.42)	526 (55.25)	256 (26.89)	81 (8.51)	19 (2.00)	66 (6.93	952
2.	Assam	0 (0.00)	8903 (34.41)	10646 (41.15)	3168 (12.24)	1552 (6.00)	1604 (6.20)	25873
3.	Bihar	757 (1.47)	13303 (25.89)	23407 (45.56)	8254 (16.07)	3498 (6.81)	2158 (4.20)	51377
4.	Manipur	0 (0.00)	510 (18.50)	820 (29.74)	572 (20.75)	329 (11.93)	526 (19.08)	2757
5.	Meghalaya	0 (0.00)	1969 (53.33)	1046 (28.33)	355 (9.62)	143 (3.87)	179 (4.85)	3692
6.	Mizoram	0 (0.00)	1119 (11.84)	273 (27.16)	233 (23.18)	177 (17.61)	203 (20.20)	1005
7.	Nagaland	0 (0.00)	42 (3.71)	132 (11.67)	168 (14.85)	216 (19.10)	573 (50.66)	1131
8.	Orissa	200 (0.59)	14112 (41.29)	8746 (25.59)	6475 (18.94)	2253 (6.59)	2392 (7.00)	34178
9.	Sikkim	0 (0.00)	21 (4.49)	67 (14.32)	88 (18.80)	78 (16.67)	214 (45.73)	468
10.	Tripura	1 (0.05)	145 (7.52)	512 (26.57)	509 (26.41)	305 (15.83)	455 (23.61)	1927
11.	West Bengal	2 (0.00)	1679 (3.46)	14065 (29.03)	13994 (28.88)	9408 (19.42)	9308 (19.21)	48456
12.	A & N Islands	0 (0.00)	41 (23.16)	43 (24.29)	31 (17.51)	19 (10.73)	43 (24.29)	177
	All Eastern Region	964	41370	60013	33928	17997	17721	171993
	All India	2628	148033	171389	80365	47188	19789	529392

Percentage of Teachers in Schools are given in parentheses.

Source : Fifth All India Educational Survey : Selected
Statistics as on September 30, 1986, NCERT, New Delhi,
Pages-82-83.

Curriculum Transaction in Multiple Class Teaching

In most of the countries primary school curriculum is supported by a list of what are called "minimum learning competencies". These are usually analysed into objectives relevant to each class level. The methodology to be followed to achieve these objectives are also indicated.

The major problem of the teacher in a single or two teacher school concerns the planning of his work. He has to plan his work in such a way that the students of different classes are purposefully engaged in activities and study. Most teachers in these schools are indecisive about curriculum transaction - specially, what to teach and how to teach ? These teachers tend to use methods of teaching and instructional materials which are designed for the ordinary primary school classroom situation to their own multiple class situation. Another major problem for the teacher is the absence of individualized instructional materials for use with students in multiple class teaching. Likewise, there is also the need for developing tools for continuous evaluation and dignostic testing. Such an assessment would help the teacher in understanding the progress of each student and for planning remedial work in each subject.

> - How do you help teachers in evolving methodologies of teaching suitable to multiple class teaching ?
> - What instructional materials such as work books, self study materials, self assessment materials etc. do you think would be helpful ?

Problems of Teaching Learning Process
In Multiple Class Teaching Contexts

The following are some of the problems related to the teaching learning process : '

- The tendency of teachers to work with multiple classes as one group without taking into account the special needs, and developmental stages of the learners.

- Teacher's lack training in handling multiple class situation and they are often too causal in teaching.

- Over emphasis on completion of textual lessons.

- Insufficient attention to gifted and slow learners.

- Assigning and correcting of home work of students of different classes.

- Insufficient time for health and physical education activities, creative arts and cocurricular activities.

- Problems of individualizing instruction in multiple class situations.

- Absence of instructional materials and A.V. aids suitable for use in multiple class teaching.

- Frequent interruptions and distractions in multiple class teaching.

The above are only some of the problems and the list could be even more. These problems merit our attention.

> - How would you help the teacher to face these problems ? List out your ideas and suggested activities.

Classroom Organization and Management in Multiple Class Settings

Classroom organization and management is as important a component as time budgeting in multiple class teaching. Unlike the regular primary school, in a single or two teacher school daily or weekly time table is prepared keeping in view the load of the teacher, the various activities to be assigned to the students, the classes and activities to be managed by monitors, the facilities available within the school etc. Normally, the following are taken into account in preparing the daily/weekly schedule :

- allocation of periods to subjects in terms of the weightage given in the curriculum.

- each period of 45 minutes has 15 minutes of direct teaching by teacher, 15 minutes of assistance by monitor/voluntary teacher, and 15 minutes of self study by pupils.

- activities planned to be mostly based on textual lessons.

- cocurricular activities.

- health and physical education activities.

Flexbility characterises the time-table in a single or two teacher school where multiple class teaching goes on.

- What timings would be suitable ? Should there be morning and afternoon sessions ?

- Prepare a daily/weekly time-table and try out.

<u>rangement and Combining of</u>
<u>r Multiple Class Teaching</u>

seating arrangement of multiple class teaching is
from the usual arrangement one sees in the primary
.e seating arrangement takes into accounts a number
;. These include :

'ailability of space.
)mbination of classes for teaching and other
:tivities.
tudents comfort and adequate lighting.
isual and hearing problems etc. of students. .
lnimisation of noise distractions etc.

re are no prescribed rules or standards for combining
r for seating arrangement. The seating arrangement
s the combination of classes may vary from one --
to another. Usually non-consecutive classes are
ogather on the assumption that the students of higher
re capable of independent work while student of lower
epend upon teacher assistance. What ever the combination
s used and whatever seating arrangement may be followed
important thing is to train children in self-discipline.

 following is an example of seating arragnement :
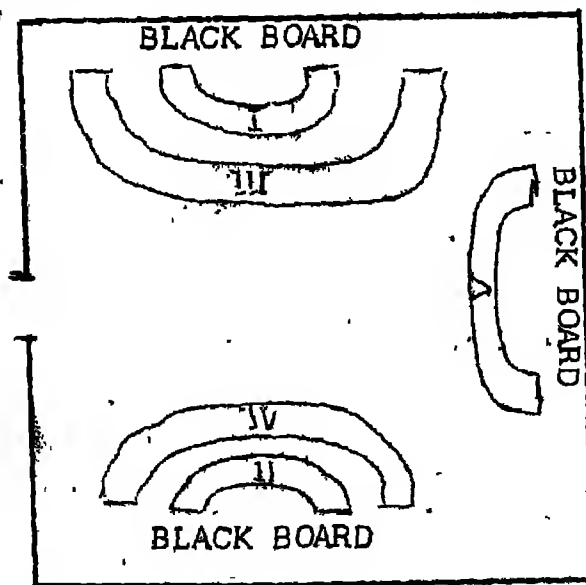
A teacher in a single or two teacher school, by virtue of his own experience over the years may adopt class groupings which are found to be useful for various activities related to the curricular or co-curricular domains.

- Suggest and tryout class grouping for curricular and co-curricular activities.

- What sort of seating arrangement would you use if the school has - (a) only one hall, and (b) two rooms.

- How do you manage instruction in other classes when you are busy teaching in a class.

Developing a Climate for Learning

Most children in our rural areas have no pre-school education. Therefore, it is desirable that the teaching in classes I and II is informal for a few months. Story telling, games, play way activities etc., may be planned to generate, promote, and sustain school readiness in children. These activities should involve pupils so that they develop listening comprehension, speech articulation conversational skills etc. Actual Reading, Writing and Arithmetic can be taken up as soon as children become regular in their attendance.

Evaluation of Pupil Progress in a Multiple Class Teaching Context.

In MCT situations, the students are made to understand what to learn and how to learn. Students are given clear cut instructions as to what they are to do and what is expected of them. Timely diagnosis of student weaknesses and continuous monitoring of students work is important for reinforcement, feedback and remediation. Remedial approaches in MCT context

include special instruction for removal of doubts and
difficulties, additional exercises in areas where students are
weak, attachment with bright students or senior students, and
provision of self-learning materials.

Fostering a Positive attitude towards MCT

The level of parental literacy of children in the single
or two teacher schools is rather low. They often fail to see
the relation between education and future jobs for their
children. Children also understand that their parents are not
keen on their education and so absent themselves on minor
pretexts of assisting parents in their work. Inability of
parents to provide textbooks and stationery adds to the poor
performance of children at school.

Multi class teaching is seen by many as undesirable,
although in terms of pupil numbers it is a necessary alternative
to single class teaching. How to generate a positive attitude
towards Multiple class teaching ? The following are some of
the ways to generate favourable attitude towards Multiple class
teaching :

- Convince parents that MCT is not inferior
  to single class teaching.
- Publicise the results of multiple class
  teaching.
- Make teachers realise that teaching in
  multiple class situation is not difficult
  than teaching single class provided they
  possess the basic skills in the art of
  multiple class teaching.
- Ensure that the teachers teaching in
  multiple class situations have as much status
  as those teaching in ordinary primary schools.
- Convince teachers that their posting in a single
  or two teacher school is not a punishment.

Pre-service Training of Teachers and Multiple Class Teaching

As it is, there is no provision for special teacher training to meet the needs of single or two teacher schools. There are primary teacher training institutions which prepare primary teachers and their teacher education programmes, by and large do not include multiple class teaching methods. Very few provide some theoretical instruction about single teacher schools, multiple class teaching and non-graded schools. Most institutions, however, do not expose their student teachers to the single or two teacher situation even for a short duration or for practice teaching. Consequently, the teachers coming out of these institutions have no practical experience in handling the classes when appointed in such schools.

- Should multiple class teaching be offered as an area of specialization like 'School Administration', 'Guidance and Counselling' etc.

- How do you expose student-teachers to multiple class teaching situations ?

Inservice Training of Teachers and Multiple Class Teaching

The purpose of inservice training for primary teachers is to enable them to keep pace with the developments in the content and process of education. Inservice teacher training programmes for primary teachers are organized in every state every year. But such programmes for single/two teacher schools are extremely rare if not non-existent. There is a great need for inservice programmes for teachers in single or two teachers schools. Such programmes should be in areas such as :

- Multiple class teaching.
- Classroom organization and management.
- Preparation of instructional materials (including low cost or no cost aids, self-learning and self-evaluation type materials, work books, activity sheets, teachers.guides etc.)
- Continuous comprehensive evaluation of pupil progress.
- Use of community resources both human and material.
- Teaching methodologies suitable for multiple class teaching.
- Minimum learning outcomes and their assessment.

- What other inservice programme would you suggest ?
- How do you ensure that the inservice programmes are need based ?
- What follow up action would you propose ?

Mere provision of inservice training to teachers of single or two teacher schools is not enough. We need to evaluate the performance of teachers who have undergone such inservice training. It is also necessary to strengthen the supervision of such schools so that we are in a position to plan need-based inservice training programme in areas where deficits are noticed.

Strategies for Supervision of Multigrade Schools

Supervision of single or two teachers schools is rather scanty. The reasons include remoteness of schools, difficult terrians, absence of transport facilities, etc., very often the supervisors themselves are not exposed to these school situations. There is a need to orient supervisors

on the functioning of the schools, multiple class teaching strategies, problems faced by teachers in Multigrade schools, community involvement and parental participation in school programmes etc. It is a good idea to have inservice programmes for supervisors along the same lines as those conducted for teachers of multigrade schools.

Advantages of Multigrade Schools

Single teacher schools, inspite of a number of problems associated with them, have certain definite advantages. They are the only alternative to education of young children in certain regions of the country. Grouping together children of different classes, ages and abilities as practiced in Multigrade schools have merits. It lays the foundations of community living - It develops in children the habit of working on their own through participation in self-learning situations - Children learn to display a high sense of responsibility - The workshop like organisation of classes calls for active participation of pupils. As the children are in contact with only one teacher over a period of years, a strong teacher-pupil relationship is developed - The organisational structure and the flexible nature of the time-table are such that they enable the pupils to learn at a rate suited to their needs and abilities - Teacher has a tremedous opportunity to individualise instruction.

> - Can you think of other advantages ?

In the context of universalisation of elementary education, it is necessary to strengthen these schools. Equally important is the provision of competent teachers for these schools. The DIETs in our country have to become more sensitive to the needs and problems of schools where multiple class teaching is the only alternative.

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b/s

Module 16.

Education of Children with Disabilities

Dr. S.K. Goel

Background

Objective

Learning Activities

Children with Locomotor Disability

Children with Speech and Hearing Disorders

Children with Visual Impairment

Children with Low Mental Ability

Children with Learning Disability

An Overview

References

Self-Check Exercises

Key

BACK-GROUND

You might have come across some children with special needs in your classrooms. These children have learning problems and need a little extra help from you. Sometimes it may be easy to understand their problem but sometimes it may not be possible and learning problems may persist despite your special help. You get an opportunity to observe all the children in the initial grades in both academic and non-academic situations. These observations can facilitate the early identification of disabled children. The teachers can perform this function successfully if they are aware of the specific manifestations of the disability in personal appearance and behaviour. These children have learning problems because of factors either inherent in themselves or in their homes or in their schools.

The degrees of special needs arising out of a disability, alongwith educational implications, have been worked out in this module. The learning activities involve (a) individual activities of doing paper-pencil exercises and reading; (b) group work; and (c) discussion in plenary sessions. You will enjoy doing these exercises and many guidelines given in this module regarding simple identification procedures for various disabilities and their educational implications will ease your problems to a considerable extent. At the end of this module, some self-check exercises are given and this will help you to evaluate your learning.

OBJECTIVES

After completing the module, you are expected to:

1) State the various learning problems of the disabled children and classify them under various categories.

2) describe ambulation disabilities (that are cerebral and non-cerebral), special health problems, convulsive disordrs, sensori-motor disabilities, mental retardation and learning disabilities.

3) identify the children with disabilities at initial level and refer them to specialised agencies for detailed investigation and assessment.

4) Suggest the points of action for educating children with disabilities in the least restrictive environment.

5) list the agencies and organizations that teahcers may contact for assistance in meeting the educational needs of children with learning problems identified above; and

6) Suggest follow-up action that you propose to take to meet the educational needs of such children in your classroom.

LEARNING ACTIVITIES

During your teaching career you must have come across some children who have learning problems and do not perform well as expected by you inspite of your best efforts and special attention. Your colleagues must have also experienced the same problems with such children and might have possibly shared their views during some formal or informal discussion.

Why not think them over and list all the learning problems of such children on the basis of your experience. Also make an effort to find out the possible causes of such learning problems. You might have spoken to their parents, siblings, pe rs, other teachers and also directly to the children and thus may help you to find out the possible causes of learning problems. You may further find out the causes may be classified into various categories i.e. Home, School, Child or any other. Let us do some of these activities.

Activity Sheet No.1   Learning Problems of the Children
                            in the Classroom.

- -

I find the following learning problems of the children in my classroom.

1. . . . .
2. . . . .
3. . . . .
4.
5.
6.
7.
8.
9.
10.

Activity Sheet 2: Possible Causes of Learning Problems.

Problems

I feel that the learning problems of my children are due to following reasons.

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Activity Sheet No.3: Classification of Learning Problems.

Category:	Learning Problems Classified Under this category
1. Child	1.
	2.
	3.
	4.
	5.
	6.
	7.
	8.
	9.
	10.

2. School   1. _____

                       2.

                       3.

                       4.

                       5.

                       6.

                       7.

                       8.

                       9.

                     10.

3. Home   1. _____

                       2.

                       3.

                       4.

                       5.

                       6.

                       7.

                       8.

                       9.

                     10.

4. Any other   1. _____

                       2.

                       3.

                       4.

                       5.

                       6.

                       7.

                       8.

                       9.

                     10.

The unfavourable attitude of parents and siblings towards the child, the broken family, the marital disharmony between the parents, frequent transfer of father leading to adjustment problems to the child in different schools could be some of the factors related to learning environment at home. The biased attitude of the teacher, inadequate instruction and facilities could refer to the learning environment of the school. Any hearing/visual/special health/ lowered intellectual level, etc. could be the problems of the child. We as teachers cannot afford to neglect these children and suitable curative and corrective measures will have to be taken. If no suitable measures are taken, many new problems will crop up and the learning problems will multiply. Such situations are likely to cause frustration due to constant failure and as a result, the children will ultimately drop out and develop behaviour problems which may be detrimental to their well-being.

The focus of this module is to deal with children with disabilities in regular schools.

You must have made various attempts to deal with the learning problems of your children. You must have made certain behavioural observations and used some adaptation/adjustment in the curriculum and modifications in your teaching methods. You must have supplemented your verbal explanations by using various instructional devices/audio-visual aids and showing practical demonstrations.

You may list the action taken by you so far and also think what further you can do about them.

Activity Sheet No.4: · Teacher's Approach to deal with children with disability.

Disability	Action taken so far	Further action Required
	1.	1.
	2.	2.
	3.	3.
	4.	4.
	5.	5.
	6.	6.
	7.	7.
	8.	8.
	9.	9.
	10.	·10.

Once these children with disabilities are observed consistently in the classroom, they may be referred to specialized agencies. They may require some medital help and correction to overcome the disability e.g. they may need hearing aid/lens/magnifying lens/crutches/wheelchair/writing aid, etc. The curative and corrective measures are accompanied by adjustment in curriculum and instruction with the objective of making the curriculum accessible to such children. Each area of disability has been discussed briefly within this specific framework and some important guidelines for identification of disability and education of children have been highlighted.

CHILDREN WITH LOCOMOTOR DISABILITY

Children with physical disabilities are those whose physical or health problems result in an impairment of normal interaction with society to the extent that specialized

services and programmes are required for them. They may have locomotor problems i.e. problems related to bones, joints and muscles. As a result, the mobility of limbs and extremities gets restricted. They may find difficulty in moving around and some other problems in their home and school environment but they are capable of learning like other children. For example, a child having certain deformity in fingers may not be able to have a proper grip of the pencil and experience a problem in writing. Some children having postural defects may have certain difficulties in performing some learning activities due to fatigue. Some normal children may also make fun of these disabled children due to lack of awareness and the disabled children may therefore fact adjustment problems.

Like children with other disabilities, the physically disabled are typically grouped in categories. We will discuss children who are grouped according to their abilities to function in a particular area and children who are grouped according to their medical diagnosis. The functional categories are ambulation, which refers to the child's ability to move from place to place, and vitality which refers to the child's health and ability to sustain life. In the medical category, we will discuss convulsive disorders. We will also discuss architectural barriers, and devices designed to assist the physically disabled.

Terminology Based on Anatomy

Term	Body Area Involved
Monoplegia	One limb
Hemiplegia	Both limbs on the same side of the body.

Paraplegia	The lower limbs.
Diplegia	All four limbs, but the lower limbs more seriously than the lower.
Triplegia	Three limbs
Quadriplegia	All four limbs
Double Hemiplegia	Upper limbs more seriously affected than the lower.
Anterior	Front
Posterior	Back
Medical	Nearest the middle
Lateral	Farthest from the middle
Super-ior	Nearer to the head.
Inferior	Farther from the head.

There are a number of other terms used to describe the physically disabled. The terms "proximodistal" and "cephalocaudal" are used to describe the growth of children. The term proximodistal means that the development proceeds in the outward direction. That is, the central parts of the body mature earlier than the peripheral parts. For example, the trunk and shoulders develop first and then the arms and fingers begin their real worth. The term "cephalocaudal" means head-to-foot direction of development. The head starts growing at a very rapid rate almost immediately after conception. A fetus's head is well developed before his legs assume their final form; are buds appear before leg buds. This progressive differential growth first the head, then the trunk, then the legs - has been designated by the term cephalocaudal (head-to-foot).

AMBULATION DISABILITIES:

Physical disabilities that prevent a child from entering a building, traveling easily from room to room, using toilet facilities, moving from one floor to another, or traveling in a crowded halfway all cause serious problems. It is this type of impairment that has restricted the physically disabled to special schools and modified self-contained classrooms. We will briefly describe the ambulation disabilities which are cerebral in origin and which are caused by noncerebral factors.

Cerebral Palsy

Cerebral Palsy (CP) is a ambulation disability that is cerebral in origin. CP is caused by damage to the brain. It is characterised by impaired motor coordination. It is a nonprogressive disorder that affects gross and fine motor coordination. The other disorders often associated with CP are communication disorders, sensory disorders, convulsive disorders, intellectual deficits, etc. There are several types of cerebral palsy including spastic, athetoid, ataxia, rigidity, tremor and mixed.

CP can cause a wide variety of problems, some very serious, some relatively easy to adapt to. Those who suffer from it can be expected to attend school in regular class-rooms, in classes for the orthopaedically handicapped, or in programmes for the severelly or multiply handicapped. These children may need physical, occupational and speech therapy. Some will need minimal extra attention; where-as others will need a great deal of assistance to develop to their full potential.

AMBULATION DISABILITIES (Caused by noncerebral factors)

The other disorders that affect ambulation are muscular dystrophy, spinal muscular atrophy, poliomyelitis, arthrogryphosis, arthrities, osteogenesis imperfecta, spinal cord injuries and other musculosketetal disorders. Muscular dystrophy is a progressive weakening and degeneration of the voluntary muscles. Spinal muscular atrophy affects the spinal cord and results in progressive degeneration of the motor nerve cells. Poliomyelitis (infantile paralysis) is a viral infection that affects or destroys the cells in the spinal cord. When these nerve cells are destroyed, the muscles that they serve eventually die or become paralyzed. The paralysis may affect the entire body or just parts of the entire body. Many people with polio are bed-redden, confined to wheelchairs, or dependent on braces and crutches for ambulation. Spina bifida is a congenital defect. caused by the failure of the bones of the spine to grow together completely. Ostegenesis imperfecta is also known as brittle bone disease. Arthorogryphosis is a congenital disorder characterised by stiff joints and weak muscles. The first signs of the disease Arthritis are general fatigue, stiffness and aching of the joints as they swell and become tender. The five common types of arthritis are: rheumatoid, osteoarthritis, ankylosing spondylitis, rheumatic fever and gout.

A problem in one part of the body frequently causes problems in another part. Children who have spina bifida, muscular disorders, or other disorders frequently have back problems as well. Muscles that pull too hard or that are unequally balanced· can cause such disorders as scoliosis

lordosis, and kyphosis. Inadequate muscle tension sometimes results in the complete collapse of the skeletal system. A club foot is a disorder that can appear by itself or in conjunction with another problem. Children with this disorder are born with one or both feet turned down and in. Amputation is another important disability. It can be partial or complete. Most amputations are necessary because of accidents but some are required by life-threatening physiological disorders and diseases. Limbs may also be missing as the result of disruptions in the early fetal development of the limbs. This sometimes occurs randomly but it can be caused by drugs such as thalidomide if taken by the pregrant woman particularly during the first trimester of pregnancy.

The children with locomotor disabilities can be easily identified with the help of the following checklist.

Identification checklist for Orthopaedically Disabled Children.

1. Observable deformity in fingers, legs, hands, waist (Spine), neck, etc.
2. Frequently complains of pains in the joints or shows signs of pain during physical exercise.
3. Walks awkwardly with jerks/limp.
4. Has amputated limbs.
5. Falls frequently.
6. Has difficulty in sitting, standing and walking.
7. Has difficulty to have a proper grip of the pencil.
8. Innovluntary movements of limbs.
9. Poor motor control or coordination. The child is unable to coordinate two or more muscle groups for performing any task.
10. Moves in a shaky fashion.
11. Has difficulty in holding objects, picking up and putting them on the table or on the ground.

The teacher must assist the parents of such children to procure aids for mobility and proper functioning through District Rehabilition Centres, Vocational Rehabilitation Centres.

DISABILITIES THAT AFFECT VITALITY

Some of the disabilities that can affect the vitality of children are congenital heart defects, cystic fibrosis, diabetes and asthma, children with disabilities that affect vitality are frequently placed in special, classes or programmes. Although all these disorders are life-threatening, some are more dangerous than others. All children with these types of disorders will need special assistance from a primary care worker or teacher, and special educational, social and vocational training as well.

Children with mild health problems come under the educable IED group. Their health problems donot interfere with educational planning. But precautions nyed to be taken in terms of getting adequate medical checkups and support. There are children with severe health problems who cannot be integrated in regular schools. The severity of their health problems interferes with educational planning. Such children require constant medical attention and may not be able to participate in the academic and non-academic activities of general classrooms. These children require rest very often as they get severely tired after 10-15 minutes of studies. Such children need to be educated either in special classes in regular schools or be given homebound/hospital bound instruction.

Children with special health problems can be identified' by the teacher with the help of following checklist.

Children with Special Health Problems : Identification
                                                    Checklist.

1) Shortness of breath.
2) Blue apperance of skin.
3) Low tolerance for exercise.
4) Frequent coughing.
5) H ve an increased appetite. .
6) Have low physical stamina and gets easily tired.
7) Takes snacks, sweet biscuits during classtime.
8) Excessively restless.
9) Extremely slow and inactive.
10) Complains of frequent pains in arms, legs, joints, chest etc.
11) Extremely inattentive.
12) Has slight temperature most of the time.
13) Faints frequently
14) Gets irritated, anger very quickly.
15) Frequently throws temper-tantrums.
16) Exhibits destructive and aggressive tendencies without proper reason.
17) Frequent urination, abnormal thirst, extreme hunger, rapid loss of weight, sleepiness, weakness.
18) Frequent skin infections such as itching/boils, etc.
19) Breathes noisily and perspires often.
20) Allgargic to dust and feels difficulty in breathing.

CONVULSIVE DISORDERS

Epilepsy and seizures are categorised under the general heading of convulsive disorders. Epilepsy is caused by uncontrolled electrical discharges in the brain and can. usually be controlled with medication. Epilepsy is treated as a special health problem. The three primary types of seizures that result from epilepsy are grand mal, petit mal, and psychomotor seizures.

You may protect the child by cradling it in your hands and donot restrain child movement, however. The teacher may notice the following symptoms of this problem:

1) The child shakes violently as if in the grip of hysteria.
2) The child becomes unconscious.
3) He falls and moves arms and legs violently.
4) He may become pale and there is constant recurrence of fits.
5) He may unnecessarily go on rubbing of arms and body parts.
6) There is twitching of eye lids.
7) He starts taking off his clothes.

EDUCATIONAL IMPLICATIONS

Many types of assistive and adaptive equipment have been developed to help physically disabled children in their day-to-day existence, travel, adaptive to their environment, and communication. Prosthetic devices such as artificial arms and legs are used to replace missing body parts. Orthotic devices are attachments, such as a leg brace or a splint that assist a body function.

Depending upon the severity of the child's physical disability/special health problem and the extent to which he requires special attention, the child might be placed in any of the educational environment which is least restrictive. The great majority of the physically disabled children can be educated in regular classrooms with the use of assitive equipment and special teaching aids. Before recommending the placement of orthopaedically disabled children in the regular

classroom, it is necessary to consider that their medical, travel, transfer and lifting, self-care, and positioning needs can all be appropriately met in the regular classroom.

The first and foremost thing is that a teacher should create an atmosphere of acceptance of a disabled child in the classroom. He should be involved in all learning activities as an equal partner with his peers. The teacher should encourage peer interaction on the basis of mutual respect, whole-hearted support and cooperation. This can be facilitated by telling the normal children the implications of physical disability.

Necessary seating arrangements for the disabled children in the front side will facilitate free movement for other children in the classroom. Ramping arrangements may also be necessary for children with wheel chairs. They should be given adequate opportunities for participation in games, physical and recreational activities at their level of functioning. Efforts may be made to plan such activities for normal and disabled children as a joint venture.

In the classroom you must have experienced of dealing with a child with locomotor disability and adjusted your teaching and classroom arrangement for children with problems of (a) movement from one place to another, (b) posture arising out of muscle tension, and (c) muscle rigidity interfering with their academic learning/skills.

CHILDREN WITH SPEECH AND HEARING DISORDERS:

Communication is disordered when it deviates from accepted norms such that it calls attention to itself,

interferes with the message, or distress the speaker or
listener. Speech results from many organs of the body working
cooperatively to produce sound. The three major types of
sounds in our language are vowels, diphthongs, and consonants.
Speech and language are developmental processes acquired over
time. Language disorders are the most complex and most serious
of all communication problems. Most speech disorders involve
problems with articulation, voice or fluency. Speech
language pathologists are the professionals to deal with
communication disorders. The classroom teacher has an
important role in the early identification of communication
disorders. The following checklist summarizes behaviours and
characteristics of children with speech disorders:

a) Does the child have any observable deformity of
the speech organs ?

b) Does the child make frequent natural breaks while
speaking words and phrases ?

c) Does the child frequently mispronounce despite
corrective efforts make by the teacher ?

d) Does the child hesitate in participating in oral
group activities ?

Gains made in therapy sessions must be reinforced in
the home and classroom for speech therapy to be effective.
A child listens a lot before the can speak well. Our ears
are the doorways to the world of communication. It is the
listening-child who learns to say his first words by the
age of 12 months. The professionals who evaluate hearing by
means of audiometric testing are called audiologists.
Hearing loss can affect speech and language development,
and educational, vocational, social and emotional adjustment.

Depending upon whether hearing loss is mild, moderate, severe
or profound, the hearing aid is to be fitted. Hearing aids
make sound louder but donot make sounds clearer. Auiditory
training is important for listening. For educational purposes,
children with hearing disorders are classified as either
hard of hearing or deaf. The philosophy of total communication
makes use of both oral and manual procedures to teach deaf
children.

Regular classteachers should be able to recognize
signs that may indicate hearing disorders so that they
can refer children for hearing evaluations. They can help
keep children with hearing disorders in the regular classroom
in many ways. A classroom teacher should watch for the
following signs of possible hearing loss.

IDENTIFICATION CHECKLIST:

1) Does your child have problems paying attention
   in school ?

2) Does your child favour one year for listening
   purposes ?

3) Does he have problems to hear when you speak to
   him from behind ?

4) Do you think your child can hear, but only when
   he wants to hear ?

5) Do you think your child speaks too loudly or
   too softly ?

6) Does he exhibit voice problem and mispronounciation?

7) Does he tune the Radio/TV too loud ?

8) Does your child answer questions irrelevantly ?

9) Does your child keep away from age mates ?

10) Is your child unable to respond when you call from the other room?

11) Does your child understand only after few repetitions ?

12) Does the child focus on the speaker's face while listening to and understanding speech ?

13) Does the child ask for help from fellow students in taking notes when the teacher gives verbal explanation of the lessons in the classroom ?

14) Does the child complan of frequent earaches or ear discharge ?

15) Does the child scratch his ear frequently ?

16) Does the child have any observable deformity of the ear ?

If one or more of these symptoms are present in your child, you need to observe the child and see if the behaviour is consistent in similar situations. If the behaviour is found consistent, your child needs professional help from an audiologist.

EDUCATIONAL IMPLICATIONS

The treatment and educational requirements of a school age child will depend on the nature and severity of the child's hearing loss. There are many children with mild to moderate hearing loss in regular schools. The following suggestions may help the teacher work with them effectively.

1) If the teacher generally teaches from the front of the room, the hard-of-hearing child should be seated in the front, preferably slightly off center

towards the windows. This allows the child to hear
better and read lips more effectively. Linght should
be directed towards the teacher's face and away from the
speech reader's eyes.

2) If the hearing impairement involves only one ear, or
   if the impairment is greater in one ear than the other,
   the child should be seated in the front corner seat
   such that this better ear is toward the teacher.

3) The child should be encouraged to watch the face of
   the teacher whenever she is talking to the child. The
   teacher should speak at the speech reader's eye level
   whenever possible.

4) The teacher should pay attention to the posture of the
   hearing impaired child's head. The habits of extending
   the head or twisting the neck to hear better can become
   firmly fixed.

5) The teacher should not speak loundly or use exaggerated
   lip movements when speaking to the hard of hearing
   child.

6) The hearing impaired child should be encouraged to
   turn around to watch the faces of children who are
   reciting.

7) An interest in music and participation in vocal music
   should be encouraged.

8) The teacher should be able to assist the child who
   wears a hearing aid in the classroom.

9) The hard-of-hearing child should participate
   activively in all plays and other activities which
   involve speech.

10) Teachers should watch carefully for illnesses in hearing impaired children. Colds, influenza, throat and nose infections, tonsilitis, and other ailments should be treated as soon as possible.

Under the centrally sponsored scheme on Integrated Education of Disabled Children revised 1987, there is more emphasis on the integrated of mild and moderate cases of hearing impaired. The integration of severe and profound cases has been recommended after preparation in preacademic skills,

CHILDREN WITH VISUAL IMPAIRMENT:

The basic function of eye is to collect visual information from the environment and transmit it to the brain. We collect nearly 80-90% of information through our eyes. This inpute is denied to the visually impaired. Visually impaired children (VIC) are classified as either blind or partially sighted. The blind children cannot read the usual text and need braille, which is read through touch. These children can be easily identified. The vision of some of the partially sighted children can be corrected through a lens, some require magnifying glasses to read and some can read only large print of 18 point and above. Some children have a restricted filed of vision.

Most visually impaired children are not totally blind. Approximately two-thirds of all visually impaired children have some remaining vision. A majority of cases of blindness are either preventable or curable.

Much use of blackboard and reading from the books is required for academic learning. Visual impairment leads to several learning problems. Such children can be easily identified by the teacher with the help of the following checklist.

Identification Checklist for the Visually Impaired.

1) Observable deformity in the eye(s).

2) Frequently reddening of eyes.

3) Rubs eyes excessively.

4) Holls objects and books close to his eyes.

5) Covers one eye and tilts the head forward.

6) Blinks eyes frequently.

7) Squints eyes.

8) Asks other children for help while taking notes from the blackboard.

9) Complains about headache following close eye work.

10) Watery eyes.

11) Pupils of the eyes are of different sizes.

12) Seems very sensitive to light.

13) Becomes inattentive during reading sessions.

14) Body becomes terse while trying to distinguish the distance of objects.

15) Takes false steps while walking.

If a child displays some of this behaviour, the teacher may refer him to PHC or hospital for eye check-up and medical treatment.

EDUCATIONAL IMPLICATIONS:

Visually impaired Children tend to lag behind their seeing peers in school achievement. Once a child has been placed in the most suitable educational environment, the educator must consider the curriculum that will best meet his/her needs.

Children with visual problems are usually taught the same sequence of subjects as children with normal vision because they need to master the same basic skills. However, unlike sighted children they will need to be taught special skills in addition such as Orientation and Mobility, Daily Living Skills, Braille Reading and Writing, etc. Although the responsibility

for implementing the total curriculum plan lies with the regular teacher, the assistance of a specially trained teacher will be necessary to teach these special skills to VIC. The media through which VIC obtain information are tactile, auditory, and visual.

Those involved in educational planning should remain flexible in their approach to placement. It is important to remember that the most appropriate, least restrictive invironment for VIC is the one in which they would normally be enrolled if they were not visually impaired. They should be educated to the greatest extent possible with sighted children. In considering basic instructional methods for visually impaired children, it is important to remember that many of the techniquest and strategies that are effective with seeing children are also appropriate for the visually impaired. VIC do have some unique instructional needs and will require help from specially trained teachers of the visually impaired in some academic areas.

Here are some guidelines for the teacher to help VIC in integrated setting.

1). Make the VIC seated in front so that they may be able to read from the blackboard without much difficulty.

2) He should write on the blackboard with bold and clear letters and speak loudly whatever he writes.

3) He should supply books with large prints (18 points or more) to cater to the needs of VIC.

4) He should supply hand lens, magnifying glasses, etc. from DRCs/hospitals for children whose correction is beyond the spectacle lens.

5) VIC may be given training in listening with comprehension.

6) Provide opportunities for participation in physical education games.

7) Give more auditory and tacticle aids to compensate for visual loss.

8) Arrange to provide audio-cassettes for VIC from SIE/ SCERT/CIET/NCERT/NIVH, etc.

9) Provide more verbal cues while explaining the concept in the class.

10) Provide compensatory aids like came for mobility, braille slate and stylus for learning to read and write braille, abacus to learn numerical concepts and brailler to cope up with speed of taking dictation in glass classroom.

CHILDREN WITH LOW MENTAL ABILITY

Mental Retardation is impaired mental ability. To be diagnosed as mentally retarded, a person must be significantly subaverage in both intelligence and adaptive behaviour. A retarded child learns more slowly; at maturity his capacity to understand will be less than normal. He finds difficulty in learning, social adjustment and economic productivity.

The classification system based on severity of systems, which identifies children as mildly retarded (Educable Mentally R terded), moderately retarded (Trainable Mentally Retarde) and Severely/Profoundly retarded (Custodial Mentally Retarded), is the system of greatest utility. The performance of mentally retarded children is affected in the class by their delayed development. The observable behaviours that will help the teacher in identifying such children are given in the following checklist.

Identification Checklist for the Mentally Retarded

1) Consistent low academic achievement
2) Has short attention span
3) Has a poor self-image
4) Lacks self-confidence
5) Has restricted communication
6) Often inattentive and easily distracted
7) Seeks immediate reward
8) Has poor muscular coordination
9) Seeks repetition and practice
10) Displays fear of failure

11) Shows excessive reliance on presentation of concere objects.

12) Has a problem in understanding instructions/abstract things.

13) Does not take initiative in group activities.

14) Faces difficulty in doing things for himself.

Educational Implications

It is best to regard retarded as "developing individuals" who are capable of growth and development that can lead to favourable changes in their behaviour. With early and proper teaching, with suitable schools and vocational training, the mildly retarded, who constitute 75 percent of the retarded population, can learn to be fairly self-supporting adults. These EMR children with good adaptive behaviour skills can often be successfully integrated into regular classes. TMR children are usually educated in special classes and can only be integrated in non-academic areas with adequate preparation. They can be trained in vocational areas and daily living skills. The retarded benefit from all types of attention and training. Even the S/PR can improve. The CMR cases need help in developing daily living skills and can be educated in special institutions. They cannot be integrated due to poor adaptive behaviour.

The following guidelines for adapatation of instructional material and methodology for the EMR may be useful for the teacher.

1) Provide concrete experiences for these children.

2) Provide direct experiences of the environment by field trips.

3) Provide more repetition and practice.

4) Present the learning task in small steps.

5) Draw their attention to important points of the learning task.

6) Ask simple questions to give them a sense of accomplishment.

7) Provide immediate reward as and when the child gives correct response.

8) Provide training in communication skills through practice in social situations.

9) Arrange situations so that they may participate along-with normal peers.

10) Transact the curriculum through simple and interesting experiences.

11) Ensure mastery of basic skills in the three Rs.

12) Organize learning activities through games, physical activities and music which form a permanent impression on their minds.

13) Arrange activities requiring eye-hand coordination.

14) Arrange activities which help in developing sound discrimination.

15) Utilize advantageously a situation chosen by the child himself for learning a particular skill.

16) Provide all necessary aids and supportive materials to learn a concept adequately.

CHILDREN WITH LEARNING DISABILITIES:

Learning Disabled (LD) have difficulties in learning to read, write, speak, comprehend do arithmetic, spell the words, etc. The basic problem in learning-disabled children in an incapacity to learn through normal conventional channels. Such children are said to have a learning disability which arises out of the problems in psychological processes like perception and memory.

From a psychometric standpoint, a learning disability can be operationally defined as a significant discrepancy between a child's actual level of achievement and the achievement

expected of child at his/her chronological age. The causes of learning disabilities are very poorly understood, but they could include such disparate factors as maldevelopment of the train and poor teaching. The main characteristies of LD children are:

a) Attention difficulty
b) Perceptual problems
c) Memory problems ·
d) Language deficits
e) Poor motivation/attitude
f) Poor sound/symbol association
g) Transfer difficulties.

In order to be called a "characteristic" difficulties that children with learning disabilities have must be

a) Observed consistently over time
b) resistant to simple remedial teaching methods
c) accompanied by a significant goap between achievement and ability.

Identification Checklist for the Learning Disabled:

1) Has difficulty in telling the time, remembering the order of days, months and mathematical tables.

2) Is always untidy and late in submitting homework and coming to class.

3) Is so excited that he is unable to complete any task.

4) Finds it difficult to organize his work, uses trial and error approach, logical and sequential approach missing.

5) Seems dull and slow in responding to others.

6) Gets easily distracted even by slight distrurbance.

7) Cannot correctly recall oral instructions when asked to repeat them.

8) Confuses between left and right.

9) Reads words backwards, puts letters in wrong order, shortens words, misreads words, omits letters, adds letters, etc.

10) Difficulty in academic subjects, difficulty may be only in one subject or a combination of subjects.

EDUCATIONAL IMPLICATIONS

Learning disabilities and behaviour disorders may occur in part because our schools are unable to provide enough high-quality individual instruction. The regular classroom teacher should become skilled through inservice training in managing learning disabilities within the mainstream of the school.

It is very difficult to identify the children with a mild degree of learning disability at pre-school level. They can be identified early if the parents and teachers plan their instructional material systematically from the very beginning. The guidelines given below will help the teacher to adapt instructional material and methodology to the needs of these children.

1) For correcting learning disabilities the child should be given exercises to identify a particular letter or number which is difficult for him to recognise, write or speak.

2) Letters or words which resemble each other, either visually or auditorilly, should not be taught together.

3) Sensory experiences should be provided to copy letters correctly and to verbalize the differences. for example, saw and was; no and on.

4) Learning tasks should be divided into small groups so that the child feels that he has mastered the task.

5) The initial part of the remedial session should involve activities in which the child can achieve 80-90% success. A sense of success will act as a motivator.

6) Encourage the child to perceive the words as a whole rather than through identification of individual letters.

7) Ensure that the child is continually busy and
interested in the task during the teaching session.

AN OVERVIEW:

There are children with some impairment who can be
educated in general school with the existing facilities by
general teachers without any formal preparation. There are
children with certain impairments who can be educated in general
schools with some preparation and slight modifications/
adjustments/adaptations in teaching methods and materials.
There are also a limited number of children with disabilities,
who will require comparatively prolonged formal preparation
before they can be educated in general schools.

Children with different types and levels of disability
will require educational provision matached with their needs.
The educational provision may be considered on the basis of the
extent of their participation in educational activities in
common with other children. Targets of Universalization of
Primary Education (UPE) can be achieved only through integrated
education. Integrated Education is not an additional burden.
Planned integrated education helps in universal enrolment and
retention. Children with mild and moderate disabilities can be
integrated in general schools. Adequate arrangements are to be
made to give vocational training to the disabled. Teacher training
programmes need to be reoriented in particular for teachers of
primary classes, to deal with the special difficulties of
handicapped children. Teachers should keep in touch with
developments in the education of the disabled. Parents and the
society need your help in developing disabled children as a
human resource just like other children.

Module 17.

EDUCATION OF THE GIFTED·CHILDREN

Dr. S.T.V.G. Acharyulu

The presence of the gifted child is a delight to
parents at home and to teachers at school. The gifted are the
'stars' of the classroom. Teachers and parents uphold them as
models for others to emulate. Teachers in our schools as
elsewhere trot them on important occasion to impress their
supervisors or visitors. Most teachers agree that the gifted
have unique abilities and that there are self-straters.

Academic Giftedness - A More Valued form of Giftedness

No other form of giftedness is given as much as importance
in our culture as academic giftedness. The criterion of such
giftedness is either school marks or the marks obtained at
some public examination.

We have shown only lip sympathy as far as the education
of the gifted children is considered. The complaint about our
schools is that they are intended for the average and not so
much for the gifted. There is grievance that huge amount of
money is being spent on average children in schools while the
investment on the gifted, who are the promise of the future
is staggeringly low.

Definition of Giftedness

The term gifted is used to refer to a small minority
of the population in a country. The size of this group depends
on the degree and kind of giftedness postulated. Further, any
definition of giftedness is bound to be influenced by the
talents, abilities and skills highly valued by the culture.

Terman considered the top one percent of students on an intellegence test as gifted. De Haan and Havighurst (1957) thought of the top 10 percent with a minimum of 120 IQ as gifted. Recently Vernon, Adamson and Vernon (1977) suggested that a child should have a minimum IQ of 130 before he is designated as gifted. More recently Angelino (1979) defined academically gifted as those with an IQ of 130 or above. It is not incommon to find some schools who consider the top 10 to 15% of the students in each class as gifted. In our country the Education Commision (1964-66) recommended that the top 5 to 15 percent of the students of our institutions could be considered as gifted.

Boarder Concept of Giftedness

However during the 50's several psychologists expressed dissatisfaction over such definitions of giftedness. Recently, the U.S. Federal Register (1975) defined the term gifted in a much broader way. According to it, the gifted are those individuals who are found to posses demonstrated or potential abilities that give evidence of superior performance capabilities in such areas as intellectual, academic, creative, performing and visual arts and who need differentiated education to realise such potentialities. Today the major concepttions of giftedness include such characteristics as superior cognitive ability creativity in thinking and production, superior talent in performing arts or other special areas which are socially desirable. Thus, any child who demonstrates excellent performance in any task of practical utility or theoritical interest could be treated as a gifted child. Gifted children possess both potential and functional skills necessary for academic achievement in the top 15 to 20% of school population.

> - What kind of children should be considered gifted and why ?

Physical Characteristics of the Gifted

The Genetic studies show the gifted to be above average in physical development. The gifted are found to be ahead of the developmental norms for the average, The gifted were heavier than others at birth, teeth, talk and walk earlier than others earlier in pubescence; nutritionally better than the average and free from sensory defects. The gifted men and women have low morality rate, excellent mental and physical health, excellent adjustment and a wide range of social and leisure time pursuits. They sleep less than the normal individuals.

Learning Characteristics of the Gifted

The learning characteristics of gifted children are usually studied by contrasting them with normal children of comparable age and grade/class. Some of the typical learning characteristics are as follows :

- They learn the fundamental skill in about one-half the time needed by average children.
- They learn with little effort and their remembering capacity is proverish.
- They have more efficient memory process than average children.
- They are fluent and gramatical in speech and have rich and advanced vocabulary for age and class level.
- They are found to be superior in intellegence, art, judgement, music, memory, mathematics, and science when measured by standard tests.
- They show intiative and often work long hours on topics that interest them.
- They will honour the prizes for intelectual work.
- They are quick in comprehension and preception of now relations. They understand advanced topics with remarkable case.

- They enjoy intellectual problems puzzles and games.
- They are good at problem solving and often display originality.
- They take work seriously and show great deal of concentrations and persistance in task completion.
- The have competance in the mechanics of writing and have a found of correct and upto date information.
- They are avid readers of learning material and often read beyond their class level.

The above are only suggestive and the list of could be much larger. There is considerable variability among the gifted in their learning characteristics.

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- From your experience with gifted children
  list other characteristics.
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Reading Abilities and Interest of the Gifted

About 50% of the gifted learn to read before entering the school..Out of these about 8% and 5% were taught to read by their mothers and fathers respectively.

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- What are your observations about reading
  abilities and interests of the gifted children ?
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Emotional Characteristics of the Gifted

The gifted compared to the average are well adjusted both at home and school and display a wide range of play and creative activities. They are highly curious, self-confident, and emotionally stable. They show great initiative and resourcefulness. They have a high sense of responsibility and often assume leadership. The gifted in general are free

from serious problems of mal-adjustment. They show more
positive self-concept self-motivation and very low anxiety
levels.

> - What other emotional characteristics of the
>   gifted children are noticed by you ?

Social Characteristics of the Gifted

The gifted children do not lag behind in displaying
superior social characteristics. The gifted are accepted and
welcomed by their classmates and teachers. Their social
status among peers is rather high. Most of the gifted occupy
positions of leadership. Some studies have come out with the
interesting finding that high IQ is not the cause of the
gifted children's popularity. When the disparity in age between
the gifted and other children is about two years or more
problems of varying degrees arise in social participation and
social games. Such problems are confornted by gifted children
from lower-class homes to a great extent.

> - What are your observations about the social
>   nature of the gifted ?

Special Abilities of the Gifted

Gifted children are not equally gifted in all
activities. There are variations in the abilities of such
children. There are gifted children who are efficient in
certain capacities but are sometimes below the average on
other capacities. For example, talent in music and drawing
correlate highly with general intelligence, young muscians
and artist may have high IQs but many children with high
IQs lack special abilities in drawing, music and or
caricature.

> - What kind of special abilities did you notice
>   in the gifted children ?

Current Practices in the Identification
of the Gifted

The concept of giftedness today is much broader than
what it was. Consequently the method of identifying gifted
children on the basis of a single intellegence test is no
longer adequate. Likewise the responsibility for identi-
fication of gifted children lies out with the psychologists
alone but with a number of personnel. These include parents,
teachers, school administrators, guidance councellors,
social workers, pediatricians and, in fact, all people who
are closely associated with the child who is supposed to
be gifted. The identification of the gifted is a complex
is a process. Literature on the gifted revealed the use of
the following types of tools in the identification of gifted:

- Intellegence Test--
- Special Aptude Test
- Standardised Achievement and Reading Ability Test
- Interest Inventories
- Parent's Report about their Children
- Teachers Observation and Nomination
- Creativity Tests.

Educational Provisions for the Gifted

The aim of a comprehensive gifted child programme
should be to offer such a diversity of levels and subject
fields that it is possible to plan for each gifted child
individually. It has to be different from what is provided
to other students. Otherwise there is no justification for
a gifted child programme. Such a programme cannot just be
the 'more of the same school experience' type either. It is

true there is no simple or universally acceptable solution to the problem of the education of gifted. We may do well to shape our educational provisions for the gifted around the programmes and techniques successfully followed elsewhere. Three major kinds of educational provisions are discernible from the literature on the gifted. They are :

A. Acceleration
B. Segregation or homogeneous grouping
C. Enrichment.

The first two are administrative while the third is basically academic in nature. Each has a number of variations. We shall acquaint ourselves with these.

A. Acceleration

This is a procedure that allows the gifted to progress more rapidly and complete a prescribed course of study in any subject in less time and/or at an early age than other students. Acceleration is based on the philosophy that's gifted student who is able to learn quickly and effectively all that is prescribed for his class should be allowed to move ahead and not compelled to stay in the class for a complete year. It involves no expenditure and no administrative adjustments or inconvinence. Acceleration can be for a minimum of one year and a maximum of two years and this is supported by research evidence. Various forms of acceleration are tired out. Recently Roth and Sussma (1974) presented a classification of the methods of acceleration. These include :

- Early Admission
- Grade/Class Skipping
- Grade/Class Telescoping
- Non-Graded Classes
- Additional Course in High School and Early Admission to College
- Advanced Placement.

Let us understand what each one really means.

i) **Early admission·**

There·are certain rules'regarding the minimum age for children to get admitted in a nursery/elementary school. In some countries like U.K. and Canada·a maximum concesion of 6 months is given to bright·children who are identified by means of intellegence tests and reading readiness tests. This is done because their mental maturity is found to be more advanced than the average children. Studies show that young children who are admitted on age concession basis tend to keep up their superiority throughout their school career.

ii)· Grade/Class Skipping was prevalent even before the 20th century. It is based on the philosophy that if a student in a given grade/class has acquired all learning experiences of the next grade or class, the child should be allowed to skip it and proceed to the next higher grade or class. This sort of acceleration is followed in some of the English - medium schools in our country, though this is restricted by and large to the primary classes. In some parts of our country it is known as 'double promotion'. Elseqhere it is known as 'acceleration through condensation·(Sypers, 1972).

iii) **Grade/Class Telescoping**

In this method the gifted are not allowed to skip grades or classes. Broadly the approach as followed in U.S.A. and experimented sometime ago in U.K. and other countries is somewhat like this. The total period of 12 years of schooling is divided for example, in North America, into 4 stages of 3 years each. These stages are :

- Elementary Division I
- Elementary Division II
- Junior High School
- Senior High School.

In our country we may divide the 12 years of schooling into :

- Primary Stage (Class I to V)
- Upper Primary Stage (Class VI to VIII)
- Secondary Stage (Class IX to X)
- Higher Secondary Stage (Classes XI to XII).

The division into stages is not the focus here. What is more important is the time taken to cover the instruction normally provided in these stages is completed in a considerably less time for the gifted. For example, in some schools, all gifted children are put in one section and the 3 years course is covered in 2 years for the gifted group. Thus, while the normal children have to pass through 12 years of schooling, the gifted children are given the opportunity to complete the same in less than 12 years. There are several variations of this method of acceleration.

iv) <u>Non-Graded Class</u>

These are also known as "Continuous Progress Scheme" or "Levels System" or "Units System". They are more popular at the elementary level of education in U.S.A. and Canada. In this the entire course for a given stage of education is divided sequentially into a number of short stages or units. Each child is given the freedom to work on his own and move from one unit to another. The 3 years course of 'elementary division' in U.S.A. which is organised sequentially in terms of Units, for example is covered by a gifted child in 2 years and by a slow learner in 4 years or more. The emphasis is on the mastery learning. The administration and organisation of such non-graded classes or schools is rather difficult. Hence, in countries like U.S.A., U.K. and Canada this is done by the computer. This is known as Computer Managed Instruction (CMI).

v)   <u>Additional Courses in High School</u>
     <u>and Early Admission to College</u>

This approach is the result of a feeling, that all
students need not be forced to spend the specified number
of years in a school, or college or university to ear their
degrees. The gifted may master the course content in less
than the stipulated length of time while the slow ones need
more time than what is stipulated. It is with the gifted
this method of acceleration is used. In schools which offer
a variety of courses the students have the option to choose
them according to their interests. Some of these are advanced
or college-level courses. In schools where facilities for
advance level are absent, the 11th and 12th grade students
are permitted to take certain first year college courses.
A gifted student can complete his schooling in a year earlier
and thus earns his degree a year earlier. This approach is
similar to that of early admission. While the early admission
approach gives age concession for admission into the elementa
school, this approach provides age concession for admission
into the college level courses. However this approach has
not gained much support.

vi)   <u>Advance Placement</u>

In this method of acceleration the gifted high school
students are given college level work. Credits are given if
they pass the required examinations. However, they have to
satisfy the normal age requirements for entry into the
college. But if the gifted enter the college they are given
exemption from certain first year college courses. This
enables them to earn their degrees in less than the time
usually taken by other students. This is so popular in
U.S.A. that the College Entrance Examination Board now
operates this scheme of acceleration.

> - What are the advantages and disadvantages
>   of acceleration ?
> - Which form acceleration do you think is
>   suitable and why ?
> - What facilities are needed to implement ?.
> - What changes would you suggest at the
>   school level ?

B. Segregation

Some belive that the best way to educate is to bring the gifted children together. In such a grouping the range of individual differences is reduced and teachers can use methods of teaching and learning experiences more suitable to them. Such aprocess of grouping is known as by various names such as 'ability grouping', 'segregation', and 'homogenous grouping'. What ever may be the name used the purpose is to provide greater opportunities commensurate with the abilities of the gifted. They are various forms of segretation. These include :

- Special schools
- Streaming
- Special classes in regular schools
- Part-time segregation.

Special Schools

In some countries, notably in U.S.A., special schools for the gifted are established. For example, there are 'Schools of Science', 'Schools of Fine Arts' etc., in large metropolitan areas. A number of criteria are used for admission into these schools and the academic requirements are stiff. Such schools exist at the elementary and secondary levels. Some of them also serve as a base for training teachers for the gifted.

Streaming

In this the students are divided into groups in·such
a way that the range of individual differences among them is
reduced. There are many variations in homogeneous grouping.
A very interesting variation which is gaining popularity in
U.S.A. and some countries in Europe is based on the philosophy,
that a gifted student need not be gifted in all subjects
uniformally. Hence, it allows a gifted student to be with the
gifted, say in mathematics, and with the average, say in a
language subject, it entails a lot of difficulties in
preparing time table. Flexible scheduling and block scheduling
are being tried.

In some schools grouping is done in terms of college-
oriented general and vocational courses. Allocation to these
groups is based on pupil achievement, school counselor's
recommendations and parental choices. Such school should
have multiple curricula and offer a variety of elective
subjects.

Special Classes in Regular Schools

In large schools, gifted students are identified class
wise and provided special instruction. The gifted are
separated from other children for all purpose except co-
curricular and recreational activities. There are diverse
schemes for special classes.

In small schools the gifted are identified and a
programme for the gifted from such schools is developed and
all such children are placed in a special school which is
centrally located. This is found to be economical and
beneficial to the gifted. For academic purposes the gifted
attend the special school and for all other purposes they
continue in their own schools. Such an arrangement, however,
requires administrative modifications in terms of transport
facilities besides a host of other problems.

Part-time Segregation

In this approach the gifted are separated from their classes for part of each day. They spend half-day with their regular teachers for clas work and the other half with resource teachers who provide enrichment activities. Some schools follow special grouping for such areas as Mathematics, Physics, Chemistry, English and Social Studies.

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- Is grouping of gifted children possible in
  our context for special education ?
- What are the merits and demerits of ability
  grouping ?
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C. Enrichment

This grew out of a realisation that the usual education offered in the school is not satisfying to the gifted. What is provided in the curriculum is too meagre and is completed by the gifted children in less than a year. This becomes a problem both to the gifted and their teachers. As a result, teachers and school administrators began to search for new content and activities for the gifted. Although acceleration and homogeneous grouping have been tried, the search for other alternatives continued. Soon the idea of enrichment of the gifted without separating them from their classes came. Enrichment involves the provision of experiences for which the average or below average child lacks the time, interest, or the ability to understand. Provision of more and more of the same kind of activities is not enrichment. To ask a gifted child, for example, to solve 20 arithmetic problems of the same level of difficulty, while others are required to do only 5 does not constitute enrichment. Enrichment involves the provisions of a greater variety of new learning situations, materials and activities of a

stimulating and challenging nature. Enrichment is not embellishment of existing course content, but different related and advanced content. Enrichment is by far the least controversial of the three administrative procedures. It implies the provision of opportunities for understanding complex ideas and systems of knowledge in different subject fields. Therefore, the emphasis is on the depth of content on a higher level of abstraction and understanding. The focus is on independent thinking, problem solving and discovering of new facts. There are various forms of enrichment. These include :

- Provision of special instruction in music, industrial arts, and other specialised fields.
- Provision of a variety of advance level and elective courses in different subjects.
- Participation in school club and other activities.
- Encouraging hobbies and collections etc.
- Arranging talks in the areas of special interest to the gifted.
- Provision of facilities to work after school hours in libraries and laboratories.
- Encouraging the gifted to coach others in the class.
- Participation in speech and essay competitions, Talent Search Examinations.
- Visitis to university departments and industrial establishment related to the interest of the gifted.
- Participation in Science fairs and Exhibitions.
- Individualisation of instruction.

Principles of Effective Enrichment

Any enrichment programme, if it is to be effective, should :

- Focus on the self expression of the gifted.
- Develop and promote skills of search and equiry.

- Stimulate self-intiated learning and independent thinking.
- Emphasis quantitative and qualitative accomplishment.
- Have a built in flexibility in its organisation and administration.
- Indivisualise instruction.
- Have competent staff.
- Have extensive facilities such as libraries and laboratories.
- Have closer community relations.

Horizontal and Vertical Enrichment

Enrichment could be individual or group horizontal or vertical. Horizontal enrichment involves the encouragement of the gifted to take up additional subjects of study over and above what is normally prescribed for the class. Vertical enrichment, as the name implies, involves the study of the subjects in greater depth through advance level courses, project work and so on.

> - What are the merits and demerits of enrichment ?
> - What kind of enrichment would you like to try ?
> - How do you go about ?

Organising a Gifted Child Programme

It is possible for each school to have its own programme for the gifted. Our schools can start the programme in a modest way within the resource available. But many would like to know how a gifted child programme is organised. The major steps in the organisation of a gifted child programme are :

- Preparation
- Planning
- Distribution of responsibilities

- Identification
- Programming and Programme Implementation
- Evaluation and Follow-up.

Preparation

At the school level, there should be a sincere feeling that the school can do more than what it is now doing to help its bright students. Such a feeling is to be cultivated by the staff of the school. To start with, we may have a committee in the school to work out preliminary details. This committee may collect such information as the following :

- The size and type of community, its values, attitudes occupational structure and educational level.
- The number of pupils whom the teachers consider as bright and the basis on which it is done.
- The kind of attention given to the education bright students.
- The ideas teachers may have for encouraging the gifted.
- The resources available in the school for providing challenging learning experiences to the gifted, and
- The existing physical facilities.

The above are only suggestive and there can be numerous other items of information that may be relevant for the purpose. Such an approach helps us to understand the existing practices and facilities.

However modestly we may like to begin the gifted child programme, the support and committment of many persons at the school, community, district, and state levels is absolutely necessary. The involvement of teachers, parents and administrators is important in generating an awareness that something has to be done to facilitate the education

of gifted in our classrooms. This should be taken as a
challenge, a matter of pride, and as a great leap for trans-
lating the concept of equality of educational opportunity
into action.

Planning

Once the stage is set, a committee consisting of
teachers, headmasters, parents, prominent local community
members interested in education, and local/district education
officers may prepare the blue print. This is based on a
thorough review of literature on the gifted. The planning may
include :

- The operational definition of giftedness.
- The statement of the objectives of gifted
  child education.
- Identification procedures and the criteria on
  which to base these.
- The decision whether services of experienced
  psychologists/test agencies/programme specialists
  would be needed for drafting the plan and programme
  suitable to the school.
- Collection of information of gifted child programmes,
  if any, in the country or abroad.
- Inviting suggestions for the gifted child programme.
- Preparation of draft plan and discussing it with
  groups of teachers, parents, experts in the field
  and State Department personnel connected with
  education.
- Deciding which of the three broad approaches -
  acceleration, segregation and enrichment - would be
  suitable for the school to follow. Specifying the
  programme in detail.
- Deciding the level at which the programme should
  operate at the initial stages.
- Finalising the plan.

Distribution of Responsibilities

As has been stated earlier, the school level committee with the head of the institution as the coordinator should assign specific responsibilities to the staff. These may include :

- Screening and identification of gifted.
- Notification to parents.
- Development of enriched curricular and cocurricular learning experiences.
- Exploring community resources for providing facilities to the gifted.
- Maintenance of records related to the various activities of the gifted children.

These are only suggestive and there can be many more things for which responsibilities are to be assigned.

Identification

Once the plan of identification and the criteria for identification are ready, we put these into action, identify and select the students with outstanding performance in the decided area of giftedness.

Programming and Programme Implementation

The programme should be such that the gifted children are given opportunity to learn more than the average students. The learning materials should be challenging enough to the gifted. Such materials are to be developed by the teachers themselves. What is provided to the gifted should be carefully planned and overloading should be avoided. Gradually, as teachers gain experience they can improve the programme and make it more and more meaningful, enjoyable, and purposeful.

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Along with the curricular provisions, teachers may plan the cocurricular activities for the gifted. They may even recommend and assign them to local organisations which are likely to stimulate their interests further and further. Such activities afford great scope for the development of students' talents.

Evaluation and Follow-up

It is necessary to know the effect of the programme on the performance of the gifted. We look for the gains and drawbacks as well. We evaluate the programme in terms of the goals set. We learn from the limitations and we effect needed improvements to the various aspects of the programme. It is again put into operation for the new batch of gifted. The gifted child programme is a continuous educational endeavour to nurture the talented.

> Draw-up a programme for the education of the gifted in your school.

b/s

Module Title

Environmental Studies(Social Sciences)

Dr. M.A.Haque

The Primary School system is the largest part of any country's education system. A closer look at what primary school teach and how they teach it reveals uncomfortable facts. In most cases the curriculum in the schools is inappropriate to the needs of the children and the community. The teaching in many schools is formal, unstimulating and inefficient. "Education", the Kothari Commission (1964-66) has stated, "is a three-fold process of imparting knowledge, developing skills and including proper interests, attitudes and values". It points out that our schools mainly concentrate on imparting bookish knowledge and neglect the other two aspects of education as the curriculum makes inadequate provision for practical activities and experiences. Moreover, as the development of useful skills and the inculcation of the right kind of interests, attitudes and values are not given sufficient emphasis, the curriculum becomes not only out of step with modern knowledge, but also out of tune with the life of the people.

In order to upgrade and improve the school curriculum the Kothari Commission advised to removal of false barriers in learning in the primary school. It is, therefore, recommended that environmental studies-embracing science and social studies be included in the lower primary stage rather than separate disciplines of science, history, geography and civics. The UNESCO report, Learning TO Be, also emphasizes the process of learning, particularly self-learning. The method of teaching should change in the direction of helping pupils to learn better and on their own, not only in the school but also outside the school.

As a matter of fact, the Patel Committee has rightly stated that:

> "We venture to suggest that the premium on bookish knowledge in India can only be remove by a complete change in th structure of the curriculum and allotment of time to the area of work. This can only be done if more emphasis is laid on activities and experience rather than formal instruction".

Thus the need to achieve the three-fold process of education and to remove the artificiability of compartmentalizing learning in the primary school has been felt the world over. One answer to this is an approach in education which is known as environmental studies approach. It has been successfully used in Britain where much literature, resource material, children's workbooks and teachers' guides have been published. In India, it has been introduced for the first time in the ten-year school curriculum developed by the NCERT. The concept of environmental studies as given in The Curriculum for the Ten-Year School: A Framework (NCERT,1975) is that in primary classes the sciences and social studies should be taught as environmental studies; in Classes I and II as a composite course including both the natural and social environment, and in Classes III, IV and V as two subjects - Environmental Studies - I (natural science) and Environmental Studies - II (Social Sciences).

The Patel Committee has recommended the inclusion of health education along with social studies and nature study under environmental studies. This recommendation of the Patel Committee is very sound and logical in view of the recommendation of the Kothari Commission (p.188).

Meaning of Environmental Studies:

All parts of the earth and its people, past and present, and the heavenly bodies that we can see are all pat of our

our environmental which the children should find out and learn about. However, with junior children we must give them as much direct experience with their environment. The Kothari Commission states that:

> At the lower primary stage the child should receive instruction in the basis tools of learning such as, reading, writing and computation and learn to adjust himself to his surroundings through an elementary study of his physical and social environment. He should participate in activities which develop his constructive and creative skills and teach him the habits of healthy living....(p.187).
> The study of the environment will be largely informal in the beginning and will be provided by making the child observe his immediate social and physical surroundings and talk in class what he observes. In Class III environmental studies will gradually lead to social studies and science which may now be treated as regular subjects, but in a very elementary manner. While the activity in the form of music, art work, dramatics and handwork should be organized for creative self-expression. Health education will stress the formation of good health habits.

Thus environmental studies is an approach through activities based on the child's physical and social environment, which leds to the progressive development of attitude and skills required for the observation, recording, interpretation and communication of scientific, historical and geographical data. However, the approach can overflow into language, mathematics, Art/craft, drama, music, moral and aesthetic education.

Aims:

According to the Joint Working Party Report on Environmental Education, UK:

The aim of environmental studies in the primary
school is to assist in the acquisition and pro-
gressive development of basic skills and concepts,
to provide a source and stimulus for creative work
and to give opportunities for making discoveries
at first hand. This approach should lead to the
development of awareness of personal environmental
responsibilities.

Although it is impossible to give detailed guidance
which can be applied immediately to all situations, it is
nevertheless possible to outline some of the aims and objectives
which all teachers should have in mind when considering the
potential of a particular situation for environmental studies.
Some of the basic aims of environmental studies work can be
expressed as follows:

1. To give the student experience of an approach to
    learning by enquiry.
2. To use the student's personal interests and abilities
    as the inspiration for his involvement in a wide range
    of related activities.
3. To encourage the student to develop attitudes of care
    and concern for his environment.
4. To encourage a spirit of cooperation between the
    members of a class or group, while at the same time
    encouraging individual self-reliance.

Objectives:

An environmental studies approach is the planned and
conscious use of all the resources of the environment in the
education process. Therefore, the objective which a particular
curriculum or scheme of work sets out to achieve need to be
very carefully and specially defined in terms of the age and
ability levels of the students at the primary level and

particular circumstances of their situation.

Some suggestions are offered below as a guide to teachers engaged in formulating their own list of objectives. These suggestions have been given on the basis of the objectives of primary education as stated in the Report of the Education Commission (1964-1966). The curriculum for the Ten-Year School: A Framework (NCERT, 1975), and the Report of the Review Committee on the Curriculum for the Ten-Year School (NCERT, 1977). Apart from this, while framing objectives for environmental studies work the suggestion of the Council for Environmental Education, University of Reading, U.K. has also been taken into account. Thus in the course of the work the student should develop:

1. The ability of acquiring knowledge through observation, study and experimentation in the areas of social and natural sciences.

2. The ability to use the vocabulary necessary for accurate recording of information from the environment, and for creative self-expression.

3. The ability to demonstrate mathematical skills, including the measurement of dimentions, counting and recording, estimate of relative sizes, use of measuring instruments (e.g. ruler, calipers, tapes).

4. The ability to record information in a variety of other ways, including sketching and casting, and to use these various skills for creative self-expression.

5. The ability to analyse information gathered by the above methods and to present it in a variety of concise forms, including graphs, histrograms, pie-diagrams, charts, flow diagrams.

6. The ability of acquiring skills for planning and executing socially useful productive work with a view to making education work-based.

7. The ability of acquiring habits of co-operative behaviour within the family, school and community.

8. The soeial responsibility by inculcati g habits (individually as well as collectively) of appreciation of the culture and life-style of persons of other religions and countries; and readiness to serve the weaker and deprived.

9. The desire to participate in productive and other process of community life and to serve the community.

10. The habits of cleanliness and healthful living and an understanding of the proper sanitation and hygiene of its neighbourhood.

11. The ability to express itself freely in creative activities and should acquire habits of self-learning.

12. The ability to assess the information from all sources. to draw from it rational comparisons and conclusions concer ing the relationship between man and his environment and begin to formulate a personal scale of values and opinions concerning the management of society and man's surroundings.

13. The ability to work without constant supervision in cooperation with other members of the class or group.

Module 19.

Course in Teaching Methodology at
Elementary Level

Environmental Studies(Social Sciences)

Dr.M.A. Haque,

Very little formal teaching in environmental studies goes on at the primary level. The Patel Committee Report has rightly recommended: "We wish to stress the need for a change in the approach to the learning process in these classes (I-IV/V). We feel that there is need for more creative and joyful activities than formal instruction. Formal instruction must be reduced to a minimum.... "Thus in this kind of learning process the teacher rather becomes an adviser, director and responsible for the provision of learning situations. Sources for ideas should depend initially on the child's own environment.

The method is 'centre of interest' or work radiating from a starting point in the environment. Children must be given as much direct experience as possible throughout the work. The environment can be used as a stimulus for creative expression. Start with the direct impact of the environment on the child and the child's individual response to it. The teacher should be prepared to follow the personal interest of the children who, either singly or in groups follow divergent paths of discovery. Ideas that are listed and can be followed, should be divided into main topics and subsidiary topics. The main topic can be a starting point or centre of interest for a class or group.

The work is not to be all 'teacher-led'. If the children can follow out the work they are interested in and want to do, their work and experiences should be of higher standard. However, it is good for them to work within limits in a main

topic. If an idea is not forthcoming, teachers might have to
lead the children in direct way on to the idea, An enthusiastic
teacher can often inspire children. In individual topics the
children can have free choice. Teachers will be much concerned
with organizing the class so that the best can be obtained from
the children, and helping them to experiment, investigate, dis-
cover and record for themselves. Sometimes assignment cards can
prove helpful, especially if a child is lacking ideas. Teachers
should try to avoid setting all the work on to assignment cards.
Practical work and the first-hand experience is just as important
as reference work using books. The work and experiences can be
carried out in class, group and individual work. For a main
topic, it is best to start off altogether as a class and then
divide up into groups or even individually, and report back
to class using displays, paintings, and other art work, models,
specimens, graphs, drawing, writing and cut-out matetials in
project scrap-books or folders, maps and charts. The teacher
must lead children into covering all aspects of a topic such as
geographical, historical and scientific. Naturally, in some topics
these aspects cannot be perfectly balanced. This does not matter
as long as the three aspects are covered. In subsidiary topic
this is not necessary as some of the topics will cover only one
or two aspects. Of course, subsidiary topics can be used within
the framework of a main topic or arise from a starving point.

The emphasis throughout the course of work should be on
individual and group inquiry work by the students themselves,
involving the use of as wide a variety of resources and local
contacts as possible. In addition there should be an emphasis
on the discovery of the interrelationships which surround
features of the environment and th-e problems and conflicits
which can arise in connection with man's attempt to alter or

control his surroundings. Cooperation and communication between
the various investigatory groups or individuals should be
encouraged, and the principles and concepts which emerge from
the local studies should gradually be examined at national
and world level, broadening the students' outlook and preventing
the investigations from being too narrow and parochial.

Choice of the Study Site:

The actual choice of a starting point will depend on many
factors and the details of the lines of enquiry which can be
followed will vary greatly from situation to situation. Any
suitable environment can provide a host of starting points from
which environmental studies work can be developed, for example,
a school playground, garden, a tree, a street, a market, the
local water supply, and so on. With all these starting points
valid inter-disciplinary studies can take place provided the
students are given sufficient guidance and are encouraged to
look at all aspects of the situation under study.

In its chapter on 'Socially Useful Productive Work', the
Patel Committee has suggested the following common activities
for Classes I and II under environmental studies:

> Exploration of productive manual work and service
> situations at home in the school and in the community,
> through observation and enquiry. The children identify
> the productive manual work and services going on around
> them, they observe who perform these work and how they
> are performed. They get familiar with the raw materials
> and tools used in the different types of work and the
> method of manipulating them. They discuss the importance
> of manual work going on around them, realize their own
> role in the performance of these and learn how could
> these be performed in a better manner. They record their
> experience through verbal and non-verbal media.

About the common activities for Classes III, IV/V under environmental studies, the report further states:

> Exploration of productive manual work and service situations at home in the school and in the community related to the basis needs, viz. i) health and hygiene, ii) food, iii) clothings, iv) community work and social service. The method of exploration will be similar to that in the previous classes. Record-keeping through graphic and verbal media may be emphasized.

A question is being raised by many that in the environmental education whether one should teach from or for or about the environment. The answer is that in the early stage the child should be taught from the environment. Gradually he should be taught for and about the environment. As a result the child will not only learn to understand his environment but also he will develop a liking of preserving the environment. Thus the best way of imparting environmental education to the child at the primary level is to give more emphasis on the local studies as shown in the following flow diagram:

Grounds
↓
Playing fields,
Gardens, Buildings,
Machines, etc.

School
↓
(Internal
environment)
↓
Visits
↓
Social
↓
Rural and Urban
Communities

Local Study
↓
Homes, Shops, Offices,
Roads, Transport, etc.

Amenity
↓
Parks, Coasts
↓
Sports Centres etc.

Production
↓
Biological
↓
Agriculture
↓
Horticulture
↓
Forestry
↓
Fisheries, etc.

Industrial
↓
Mines
↓
Factories, etc.
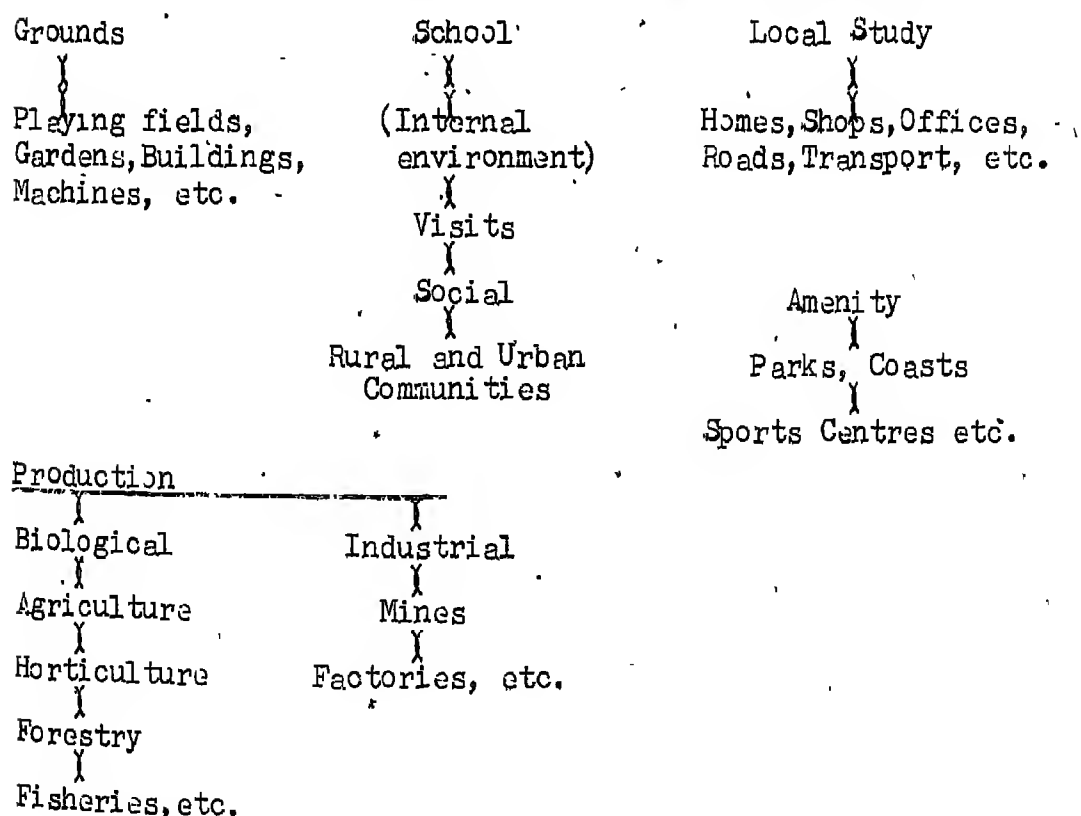
The Teacher's Role

In the teaching of traditional subjects by traditional methods, the teacher's task is straight forward and simple. The amount of information to be absorbed is decided by the teacher and the children's retention of this will be great or small according to their interest and ability. But the environmental studies approach places greater demands on the teacher. Under this system the teacher is rarely the dominant figure, but has complicated functions as mentioned below:

a) To arouse the children's interest.

b) To discuss the approach to problems or topics.

c) To organize the class into working groups, prepare work cards and group guide sheets.

d) To arrange visits or expeditions.

e) To provide reference materials for the children's use.

f) To provide materials needed for practical work.

g) To arrange for visiting speakers.

h) To discuss and guide the progress of each group.

i) To initiate and develop discussion and debate.

j) To persuade each group of children to explain their work to the rest of the class and summarize the result.

k) To provide facilities for displays and exhibitions of the work carried out.

l) To link the work with the wider world.

Conclusion:

Every child from its birth is influenced by his immediate social and physical environment. If properly utilized, the environment can become an instrument of education modifying traditional patterns. All teachers are aware of the cliches "from the concrete to the abstract" and "from the particular to the general", yet very few really put them into practice.

The environmental studies approach help to make these precepts a reality. The pupils is led to planned and directed explorations of his immediate environment-classroom, school compound, school neighbourhood and he will later relate these first-hand experiences to his study of the larger area of state, country, and world.

Teachers frequently complain of the lack of suitable textbooks in the environmental studies subjects for primary classes. But they ignore the cheapest, and most up-to-date textbook the environment. Every environment, whether urban or rural, offers varied opportunities for exploration. However, it must be remembered that the environment will not yield up its riches unless the teacher himself has carefully explored it, noted its interesting features and possibilities and then planned for the children's activities and study. The teachers have to provide the resources from the environment for learning by the young child so that the child will discover knowledge and not just cram information from the textbooks. Education, specially in the primary stage, should not lead to an overloading of the child with too many books and too much of subject matter. This is the period when the rate of learning is fast and the teachers should take advantage of it by adopting environmental studies approach. One thing should be remembered that new syllabuses are imposed on schools for their own good, and if the medicine proves a little difficult to swallow, teachers are nevertheless expected to realize that it contains the best ingredients.

Module 20.

THE TEACHING OF ENVIRONMENTAL STUDIES (SCIENCE)

Prof.(Mrs.) S. Bhattacharya

Overview

This module is an attempt at informing the teacher/ teaches educator about the environmental approach at the Elementary level. It is essentially based on the role of the teacher in learning about the environment, through the environment and for the environment.

Objectives

After studying this module you will be able to

- know what is meant by environmental approach.
- understand why the environmental approach is necessary at the primary level.
- analyse your environment to determine what components of it can be used to teach science at the primary level.
- devise activities using the environment in order to develop in the child concepts, skills and attitudes which will eventually help him in adjusting to and studying other environments in space time.
- integrate teaching of language, mathematics and art with the teaching of environmental sciences.

What is Environment ?

This is discussed in detail in Module . . . . In the case of primary school children it is to their immediate environment at the start, and extends to a wider area as the child becomes concious what is happening beyond the immediate environment.

The immediate environment of a child includes the natural world (covering flora, fauna water, air etc.) along with the social world (ways of living, working, communicating).

It is these influences which moulds the child to live harmoniously in the environment.

As with all educational systems one goes from known to the unknown. Hence an environmental approach at approach at the primary level..

Salient Features of the Environmental Approach

1. Environmental Studies (Science) involves a child in organised investigation and exploration of his immediate environment.

2. It develops in the child awareness about the immediate environment and its problems.

3. Through the study of the environment a child learns certain basic concepts, skills and attitudes which will eventually help to understand and live successfully in other environments later.

4. The approach is child-centred and is activity-based, through which it is expected to develop logical thinking and problem-solving abilities in children.

5. The learning should be through the environment, about the environment and for the environment.

6. The aim is the all-round development of the child, and this can be best achieved through an integrated approach - for example using the same lesson to teach science, language and art.

Methodology of Environmental Studies (Science)

In order to satisfactorily teach through the environment, the teacher must be accetely aware of what is present and happening in the environment of his students and using it for the day to day activities. The activities outlined below are designed to do just that.

ACTIVITY - I

    Equip yourself with a note book and try to obtain and note information about the following :

    a) Water sources of the village/mohalla and their problems.

    b) Flora and fauna - in most cases local names will serve for the student but if opportunity arises the teacher should try to find the proper Hindi/ English or scientific name. Any other information e.g. medicinal uses in case of plants, or small facts and figures about plants and animals are useful to make the class interesting.

    c) Food habits

    d) Santitation

    e) Commonly occuring diseases and disorders of the locality and their mode of transmission and prevention.

    f) Shelter - building materials, animal shelters (nest, burrowes etc.)

    g) Occupations - with special reference to any scientific concepts related with them - e.g. potter, what clay does he use, what happens if sand is present, how does he get rid of the sand - decentation, filtration.

    h) Fuels - source, use, scope for using alternate fuel.

        i) Coomunication - (a) between people

                (b) between places i.e. transport.

    This list is not exhaustive and a committed teacher may be able to gather much more information. On the other hand the average teacher should not get frightened by the long list. All the information need not be gathered all at once. It can done slowly as one takes up the topics one by one, but one

has to remember first that once information is gathered it should not be lost, and second as time goes by information should be added. Along with the pupils the teacher showed also grow in his depth of knowledge.

(b) Using the information

Having gathered this information, how does the teacher use it to improve his teaching ?

ACTIVITY - II

The information gathered above can be used by the teacher to conduct a successful field trip. An educative trip is usually well planned. Certain sequential steps have to be taken to organise a successful field-trip.

- Identify one or two concepts you would like to teach during this trip e.g. variety in forms of plants and common features.

- Decide from your previous experience (by referring to your note book) the place where you will get a maximum variety plants and yet it will be a fairly safe. Dense jugles' may harbour snakes or other harmful animals or river bank where children may fall into the water should be avoided.

- Make a list of the things you have to take with you. _____ e.g. knife, khrupa, scissors newspapers to press the plants, plastic bags, ___ a small first aid kit for cuts and bites and a bottle of drinking water for emergencies, your note-book for reference. A whistle is useful to get the children to assembled.

- Inform the children beforehand, so that they may come prepared with note-book, pencil and newspaper or a plastic bag.

- Divide the children into groups of four or five and assign each group individual tasks e.g. one group may collect variety of leaves, others flowers, other fruits and seeds, others whole plants.

- Certain general instructions are necessary and the teacher should give these before leaving for the field trip.

  e.g. (a) Do not eat any fruits or berries which may look attractive.

  (b) Do not damage plants or kill animals unnecessarily.

  (c) Collect only one or two things of a kind.

  (d) Do not go into dangerious places.

  (e) Always stay in groups.

- At the excursion site repeat all instructions and then let the children collect their own specimens, and show them how to press and keep them, draw and note the colour of the flowers and fruit. The final assessment may either be dene back in school or at the site.

- Before leaving the site point out interesting features of the plants around - plants of economic value, habits (climbers, herbs etc.)

- Collate information gathered by children, make displays illustrating concepts - e.g. variety of seeds or pressed leaves may be displayed on a poster.

- Each child should be asked to pick anything from the collection and write 8-10 sentences describing the object. This helps in developing observation skills, and consolidate the learning. For encouragement the best ones should be displayed. - Alternatively a oral method may be adapted with the each child contributing a sentence.

- How to classify can also the taught from such
  collections.

Most of the time however the teacher is not able to
organize many field trips. Often he is the only teacher in
the school, and has to tackle more than one class. At such
time giving a set of interesting activities to one class
while he attends to other classes. Such activities are child-
centred and can serve to integrate teaching of maths, arts
and languages with science. Two such activities are outlined
below.

ACTIVITY - III

Collect some glass jars with caps. Make some small
holes in the cap. Place an insect, spider, or other small
animal in each jar. Divide the class into small groups - four
per group is ideal. Give each group a jar and ask them to
observe the animal in it. After this they should be asked
to write 10 sentences about the animal and its behaviour,
and to make a drawing of it. It is more manageable to give
the same animal to the whole class. The animal can be
replaced by plants. The writing and drawing enhances the
observation skill of the child. This activity can be used to
acquaint the pupil with the flora and fauna of the area.
While one class is busy with such activities the teacher can
attend to other classes.

ACTIVITY - IV

Collect bottles of various shapes and sizes. Transparent
white bottles are best, Jars can also be used. Take 4 bottles
of same volume but different shape and dimensions. Take three
other bottles which are smaller in volume than the 4 bottles
fill the smallest completely with water. Fill the next
largest also with water, and pour this amount into one of

the four large bottles. Pour similar amounts into the other empty bottles. Lastly fill the bottle used for measurement. Number the bottles and ask each child to write down which one he/she thinks contains maximum water and why ? Now ask a pupil to come up and measure with a measuring cyclinder (found in primary science kit) the amount of water in bottle 1, and note it one the blackboard. Repeat the exercise with other bottles using a different pupil each time. Now discuss their results and the results on the board. Points which may emerge are that depending on the shape and cross section the height of the water in each bottle is different, (ii) The thickness of the glass gives an illusion of larger quantity - a fact used by manufacturers to mislead people. (iii) A 750 ml. bottle (organge squash/hard drinks) are often used to measure berosine, oil etc. and the price they pay is for a litre. This is how people are cheated.

Many schools cannot afford teaching aids but it is possible to devise simple teaching aids with whatever is available in the environment. Some of these can be made by the older pupils with the help of the older students, but for all these the teacher must collect waste materials from the environment ------ boxes of various shapes sizes, bottles, tins, plastic bags, stoppers, pieces of wood newspapers, magazines etc. Much details on this is given in the module on the low cost teaching aids. How to use newspapers/magazines is outlined below.

ACTIVITY - V

Collect newspapers/magazines, additionaly, you will need scissors/blade, glue (paste made from flower does well).

(1) Cut out large letters from newspapers and magazines and use them to teach elphabets. Many word games can be devised using them.

(ii) Cut out photographs which show lack of sanitation, pollution etc. Paste them on a large chart/brown paper, Ask the pupils to point out what is wrong in the picture. Follow up with discussion. Such a chart can also be used to evaluate students understanding of sanitation and health.

(iii) Collect pictures of various uses of wood or stone or plastics Ask the students to list the various uses and discuss the environmental problems caused by use of wood or plastic.

(iv) Use papier mache or strips of paper glued perpendicularly in layers to build models. Such objects can easily be painted with water/poster colour.

(v) Use newspapers/magazine to press flowers and plants.

(vi) Use newspapers as an alternative to blotting paper.

Evaluation

How much of the module has improved teacher competency can be tested with the following activities.

(i) Give a specific topic, "Water", 'Diseases', 'Food habits' etc., to a teacher and ask for as much information as they collect about the topic in relation to the environment.

(ii) Ask the teacher to develop a child-centred activity-based lesson plan using resources available in the environment.

(iii) Provide the teacher with random items of low-cost materials and ask the teacher to devise an aid/experiment to teach about the environment at the Elementary level.

(iv) Ask the teacher to devise a lesson plan which involve a field trip and work out the details of field trip.

What effect such methodology has on the pupil can be assessed by seeking the answer to the following questions :

- Do the pupils show more interesting in class ?

- Is the class more mangeable when such methods are followed.

- Does it improve the concept-learning, and skills and attitudes.

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b/s

Module No. 21

TEACHING OF SCIENCE AT THE ELEMENTARY STAGE

Dr. J.K. Mohapatra

Introduction

A child, being an adult in the making, is a precious national resource which needs to be moulded and natured in a way so that he/she can be a functional component of the scientifically conscious emerging society of India. To achieve this the child has to be initiated to the scientific culture right from the elementary stage. He/she has to be helped to gradually imbibe in him/her the processes of this culture.

The teaching-learning of science as is now being practised inside a classroom is the following :

a) 40 to 50 students are jampacked into a small
   room called the classroom.

b) The teacher squeezes himself into the classroom
   and teachers science to the pupils by reading
   the textbook.

c) The textbook is a dull book with episodes like
   "reptiles", "lever" and with each episode followed
   by a battery of monotonous questions.

As a result of which the pupils get completely alienated from such a system, which, hence, is not conducive to the type of learning we envisage.

Such learning will be possible only by bringing about a total change in our approach to the teaching of science. With the child-centred approach as the basis and keeping in view the mental age and the psychological framework of the child this change could become a reality by realising three important dimensions of teaching science at the elementary stage.

The dimensions have been identified to help the pupil "Learn how to Learn Science".

Dimension-I : Science -is 'FUN'

Children love fun in all spheres of their
activity. Teaching in a classroom a prescribed
science curriculum using a prescribed science
textbook through chalk - talk method is very
mundane. Learning of science can be more fun
by well designed innovative activities, where
the child not only takes part in the experiment
but also, in some cases, becomes part of the
experiment itself.

The teacher's role in these activities is
not that of transferring information, but
rather one of being,

Collect
Collate
Discuss

a) a leader in designing the fun;
b) a facilitater in helping the child to
   learn through fun, and
c) an equal partner in the game of
   learning through fun.

In many occasions, the teacher should
join the students in asking questions and
searching for answers. It is also important
to stress that

a) all the "ANSWERS" are not yet known and
b) sometimes "NOISES" are mistaken as
   answers.

EXAMPLAR - I : (Lower Primary Level)

This is a group activity.

The advantages of this activity are a) it is not
confined within the four walls of a small classroom and
b) the pupils are part of the activity.

The objectives of this activity are that the pupils will learn (a) to use the senses of smell, hearing and touch, especially the sense of smell, and (b) how predators and prey interact.

Subject   : Science
Thrust area   : Ecology and wildlife
Place of activity : Outdoors - fairly a flat area of
            6 m X 9 m with some trees
Group size   : Group of 5 to 6 students
Duration   : 40 minutes.

Activity

Cordon the area, where, this activity is to take place, off with a rope. Ask the students to spread dry leaves at different locations within the area.

Make one student the predator (tiger) and the rest of the group the prey (deer). Blindfold them all including the 'tiger'. The 'tiger' has to carry an aromatic substance in his/her pocket.

The deer have to move all the time.

The tiger, who has to catch a deer to win, does not have to move around all the time.

The tiger should be positioned at one end of the area and the deer scattered around the field. Start the game.

When a deer is caught, the game can be played again with another student becoming the 'tiger'. If the 'tiger' does not make a catch within 2 minutes, it 'dies' (of hunger) and retires from the game.

The deer should concentrate on whether they can smell the aromatic substance or not, as that is the only way (why ?) that they can tell that the tiger is approaching. Both the tiger and the deer should listen for sounds.

Discuss with the students, what other senses the deer uses to protect itself, and the tiger to hunt in the wild.

Divide the class into four groups. Ask each group to prepare a list of senses used by specific animals chosen by the teacher. Ask them to write an instance/example of the use of the senses listed by them. Then let the leader of each group present the finding of his/her group.

EXAMPLAR - II : (Upper Primary Level)

This is a group activity :

The objectives of this activity are that the pupils will learn

    a) to design an experiment
    b) to formulate hypothesis
    c) to observe and
    d) to test the hypothesis.

Subject	: Science
Thrust area	: Convection current in air, weather
Place of activity	: Classroom
Duration	: 40 minutes
Type of activity	: Group activity

Activity

Divide the class into four groups. Help each group to design the experiment in the following way. Take a glass tumbler. Partition it vertically into two halves by using a card board, make a small hole at the base of the card board. Fix a small candle at the base of one of the halves of the glass tumbler. Light the candle. Now if an incense stick is inserted

    a) in the half which does not contain the candle, what will happen to the smoke coming out from the incense stick ? and next,

b) in the half which contains the candle, what will happen to the smoke coming out from the incense stick ?

Let each group write down the answers (guess) to each of these questions. Their answers are their hypothesis. Help them to test the hypothesis.

Ask them to explain the match/mismatch between the hypothesis and the experiment.

Does this give an idea of convection current in air ?

Ask each group to enlist the precautions to be taken.

Ask them to justify their statements.

Why should there be a hole at the bottom of the cardboard ? If a hole is made at the top of the cardboard, instead, what will happen to the smoke coming out from the incense stick ?

Dimension - II : Science is 'EVERYWHERE'

Teacher has to realise that opportunities for learning science exist everywhere. The process of learning science is not confined to only the curriculum, the textbook and the four walls of the classroom. The child has to be helped to acquire meaningful experiences in a continuous, comprehensive way. These small planned experiences may form a small part of the board spectrum of environment, both social and physical. But the teacher has to operate as a catalyst so that these small pieces of experiences build into a longer mosaic of understanding. Thus the teacher has to guide the pupils to design and perform activities utilising their own local environment and opportunities.

Collect
Collate
Discuss

This out look will help the pupil to regard learning of science.

a) as a continuous process which transcends the boundaries of the four walls of the classroom.

b) as bits of correlated activities which can be performed any where.

EXAMPLAR - III : (Lower Primary Level)

This is an individual activity followed by comparison of the findings of the entire class. The objectives of this activity is to make the pupils (a) acquire knowledge about changes in weather and seasonal changes, (b) develop the skill for observing weather changes and (c) to be initiated to graphic skills.

Subject   : Science
Thrust area   : Environment
Place of activity : Home and classroom
Group size   : Entire class
Duration   : Year - Round
Type of activity : Individual activity.

Activity

Let the students discuss about weather. Let them list the types of weather conditions they can describe. Ask the students to represent each weather condition by a colour, like red for sunny days, blue for coludy days, green for rainy days, yellow for windy days and black for colud wintery days. Then taking colour papers they may cut down small pieces of say 2 cm. x 2 cm. size of each colour papers.

They may even represent each weather by symbolic drawings, like the sun for sunny days, clouds for cloudy days and so on.

Let each student prepare a callendar of the year in 12 sheets (for 12 months) of paper, providing a spece of 3 cm. x 3 cm. for each day. A callendar at home can also be used, instead. Ask each student to fill each day with symbolic colour/drawing suitable for that day. Ask them to do this at home.

At the end of the year ask each student to bring his/her weather chart.

Can they tell how many prominent seasons are there in a year ?

Can they tell the duration of these prominent seasons ?

Can they now predict the weather condition in any day of year ?

Ask them to check whether their predictions hace come correct or wrong.

If they are wrong, enquire what could be the possible reasons.

Ask the students to compare their observations with the weather forecasts in the newspaper-or on radio or television.

EXEMPLAR - IV : (Upper Primary Level)

This can be performed as an individual/group activity.

The objectives of this activity are to help the pupils develop the habit of

a) utilising readily available objects as the inputs for an experiment.
b) bringing science to the home.
c) improving his/her skill for designing experiments.

Subject   : Science

Thrust area   : Food, nutrition, Physical Science.

Place of activity   : Classroom/home

Duration   : 40 minutes

Type of activity   : Group/Individual activity.

<u>Activity</u>

Ask the pupils to write down the broad category of nutrients our body needs. Next let them write the food items each has taken on that day. Can they now match the two lists i.e., the food items and the nutrients ? Let them try. Then guide them to test their cognjectures.

Divide the class into four convenient groups.

Materials needed for each group - one potato, cowpea, biscuits, ghee or oil, bread, blotting paper, iodine and a candle. All these materials will be locally available.

After preparing paste of each type of food separately, take a little paste of each item and add iodine.

Do the pupils notice any change in any food item ?

Make a list of food items that acquired a dark colour (develop in them the idea of classification).

What do these food items contain ?
Guide them to the answer "Carbohydrate".

Next ask them to rub a little of the paste of each food item separately on the blotting paper. Heat the blotting paper a little. Does any food item leave any stain? Does light partially pass through that stain ? What do the food items that have left this stain contain. Is it fat ?

Help the pupils to come to this conclusion by using past experience.

Dimention - III : Every Child is a 'SCIENTIST'

Every child has his/her own scheme of knowledge based on his/her past experience. Any new experience that he/she encountens, he/she tries to use his/her own methods of analysis to understand it in the same way as a scientist tries to explain any new phenomena by using the existing laws.

As with a scientists, the efforts of the child may also end in one of the following results.

a) Similarity with some old experience may lead the child to put the new experience in the old scheme without introducing any change.

b) New structures may be evolved in the old schema to accomode the new experience.

c) The domain of the old schema may get modified and enlarged.

d) A totally new schema may start.

All the above findings have been richly substantiated by huge body of research sutdies. One example will suffice.

A measuring cylinder, full to the brim with water, was taken. Then the students were asked what will happen if a brass ball is dropped into the water ?

Collect
Collate
Discuss

Case-A:

   Pupil   : Nothing will happen.

   Teacher : Why ?

   Pupil   : Because I have seen that nothing
            happens to the level of tea in a
            cup although mother puts spoons
            of sugar into it.

Case-B:

   Pupil   : The level of water will do down.

   Teacher : Why ?

   Pupil   : When I go home and sit on the
            couch, the couch gets squeezed,
            because I am heavier than the
            foam. Here brass is heavier them
            water.

These are enough to demonstrate that the child
mind works like that of a scientist. The teacher
should then make an effort to see that the
scientist in the child flourishes and the child

   a) is converted from a passive learner to
      a potential discoverer and

   b) learns how to learn meaningfully.

EXEMPLAR - V : (Lower Primary Level)

    This activity will acquaint the child to the processes
of identifying variables, controling variables, designing an
experiment, observing and coming to a conclusion i.e., he/she
will get initiated to all the processes to become a discoverer.

    However the entire activity has to be so designed that
he/she enjoys it and becomes curious. Curiosity is likely to
storm his/her creativity and lead him/her to the path of
discovery :

Subject   : Science

Thrust area   : Food Chain, ecology

Place of activity: Classroom/home

Duration   : Quite long period

Type of activity : Group/Individual activity.

Activity

Ask the students to hypothesize whether animals help plants for survival or plants help animals for survival.

Write down their answers as the hypothesis to be tested.

Ask them to identify the variables i.e., a plant an animal, an environment for survival.

Help them to chose a plant, an animal and an environment. (Suggestions - Hydrila, snail and water with sand).

Generate the environment in three wide meuthed glass bottles i.e., take three horlicks bottles, take water and some sand in all of them.

Ask them how can they control the variables to test their hypothesis.

Suggestions

The bottle to contain only hydrila, the second one only snail and the third one both the snail and hydrila.

Ask the students to observe the bottles for several days. Then test their hypothesis.

Lead them to the concept of producers and consumers in the food chain.

EXEMPLAR - VI : (Upper Primary Level)

This is again an activity where the child has to discover himself/herself the principle of lever. The activity is so designed that the child will be in conflict with what actually heppens in the experiment. This cognitive conflict will generate the necessary motivation in him/her to discover the answer to the problem. This activity again needs materials which are readily available locally. The materials are two bricks, one metre scale, one round shaped pencil. Few (four or six) fifty paise coins.

Subject	: Science
Thrust area	: Lever, simple machines
Place of activity	: Classroom
Duration	: 40 minutes
Type of activity	: Group activity.

Activity

Ask the students about physical balance. Do only equal weights keep the beam in balance ? Can unequal weights also keep the beam in balance ? Do you know how this is possible ? Can you discover the principle behind this ?

Teacher may give the example of a see-saw.

Divide the class into four groups. Help each group to set up the experiment. Set the two brick with a gap of about 4 inches. Place the pencil across the two bricks put the scale on the pencil. Let the child adjust the position of the scale till it remains balanced i.e., horizontal.

Now put a 50 paise coin on one arm at a distance of 12 cms. from the pencil. Ask the students to use one 50 paise coin, put it on the other arm till the balance is restored.

Ask them to write their conclusions. Class it conclusion 1.

With one of the 50 paise coins fixed at a position of
12 cm. from the pencil, aks them to use two coins on the
other arm and balance the scale.

Is conclusion 1 correct ?
If not what is the new conclusion ?
Test it by using three coins.

Next with one of the 50·paise coins fixed at a position
of 12 cms. from the pencil, use again 2 coins on the other
arm to bring the scale to balance. Now if the two coins are
shifted by 1 cm. closer to the pencil, by how much the one
50 paise coin be moved to bring the scale to balance again ?

Make a guess ?
Test your guess ?
Experiment and find out the correct answer.
Repeat with various combinations of the four/six
50 paise coins. Tabulate the data.
Can you come to any conclusion ?
Can a law be discovered ?
What is the law ?
Test it ?

This is how the child can be guided to become a
discover and learn how to learn.

Objectives

It is hoped that after going through this module
the teacher will be in a position to

a) make learning of science more enjoyable for the
learner,

b) help the child to discover science everywhere,

c) help the child to learn such scientific
process as -

- observe, record and report accurately,
- categorise, classify and comprehend
natural phenomena,

- realise the relationship between variables in the data,

- analyse data,

- make hypothesis and test it;

- design simple experiment,

- arrive at valid conclusions,

d) groom the child to inculcate such scientific attitude as openmindedness, receptive to change etc.,

e) realise the two way interaction between science and society and

f) mould the child to a state were he/she can learn how to learn.

Transaction:

The module has to be transacted in a participatory way in the sense that the teachers and teacher educators may be asked to draw on their experience and extend the list of examples in each of the dimensions of teaching-learning of science, discussed above.

The presentation, and transaction of the module is expected to take about 2 hours including fruitful discussion.

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Module 22.
Teaching of Mathematics at Primary Level.

DR. D.C. SAHOO

The National Policy on Education,1986 takes cognizance of child centred and activity based process of learning at the primary stage of Education. This means we must work to relate the experiences and activities in the classroom which will be suitable to the child's nature, interest and level of learning. By that the learning imparted will be meaningful and useful. This approach of learning will help the child to have a strong foundation for further learning.

Objectives

1) To know the most important factors to be taken into account in the process of learning mathematics.

2) To explain the term "Child-centred and activity based process of learning" with regard to teaching of mathematics.

3). To know the desirable teaching learning strategies which will be adopted at the Primary Stage for teaching various concepts and skills in mathematics.

4) To prepare lesson plans on different topics keeping in view the strategies to be adopted.

Important factors to be taken into account:

There are two most important factors which must be taken into account while teaching mathematics.

a) The basic interest which stimulates efforts in the process of learning.

b) The sense of achievement which gives the child a feeling of satisfaction about the result of his/her efforts.

An essential condition of effective learning in mathematics is to arouse interest in the learner. To develop this interest, mathematics taught in the classroom must be meaningful and should be within the scope of understanding of the child. This should also be based upon the previous experience. This means that the teacher is required to direct, activities and experiences in such a manner so that they are adjusted to the needs and abilities of the children. If the interest in the topic/subject is maintained throughout, then success must follow. A feeling of satisfaction is necessary for effective learning. So the task should be such that it should be within the capability of the child. If this factor is adhered to, the work done by the child will bring praise for him/her.

Activity Based Process of Learning:

Psychologists are of the opinion that the activity-based process of learning mathematics helps children to learn mathematical concepts thoroughly. The Chineese proberb says.'

. I read and I forget;
I see and I remember;
. I do and I understand.

The child should be an activie participant in the learning process through his involvement in realistic and meaningful activities. The activities should be carefully selected and organised by the teachers in such a way that they can help the child to become a discoverer. In seeing the patterns, he/she can generalise. In such a situation, the child is motivated and is fully involved in learning different concepts in mathematics. This approach ensures a smooth transition from the world of play to a world of school for the child. He does not feel that he has come from his world of play to a place which is very formal. Therefore, this approach helps the child to maintain interest and develop a positive attitude towards the study of mathematics.

Teaching Learning Strategies:

This is the adoption of a method which will ensure the attainment of the desired specified learning outcomes by all the children. While preparing the strategies keeping in view upto Class V, the students may be grouped into two major groups.

1) Group of students of Classes I and II
2) Group of students of Classes III, IV and V.

Children of the 1st group are deeply interested in games. With the help of games of aiming, chasing, hiding etc. Children are able to understand number concepts. Research findings indicate that the effective use of teaching aids will be very much effective. To make classroom teaching attractive, interesting and easily available teaching aids should be used in the teaching learning process. So each Primary school should have some sort of mathematic kit equipped with inexpensive teaching aids. These aids can be improvised with local materials. Children of this group should be allowed to work together and to workout mathematical truths and facts for themselves. Role of the teacher will be guiding and correcting them when it is needed.

Children of the 2nd group are different in nature. This stage marks a beginning of certain types of logical thinking in children. Thinking logically is necessary for understanding mathematical ideas and concepts. As the child manipulates objects he indirectly establishes the truth by inductive method by concrete objects. It is not enough if the teacher 'shows', 'tells' or 'explains'. The child should derive mathematics from concrete objects, patterns and aids by his own efforts.

Mathematics cultivates thinking and reseaning skills.
So the curriculum at this stage envisages a conceptual approach
which emphasises the discovery and understanding of mathematical
ideas. Drill work for mastery of skills should be stressed. The
focus is on encouraging children to seek out and discover ideas
by themselves. Emphasis should be on problem solving and adequate
practice to attain accuracy and speed. From this it is imperative
to envolve a teaching learning environment which will facilitate
problem solving by children. They should be encouraged to
think, question, experiment estimate, explore and seek explanation.

Below, the teaching strategies of some concepts are
discussed.

1) Substraction of whole members.

Substraction is a process of determining the
difference between two numbers or quantities. The number
from which another number is to be taken (substracted)
is known as minuend. The number to be substracted is
the substrahend. The result of the process is called the
difference.

Rule for substracting whole numbers

   i) Write the larger of the two numbers as the minuend.

   ii) Write the number to be substracted underneath
      the minuend, so the nuerals are in their
      respective columns, i.e. units with units, tens
      with tens etc.

   iii) Start with units column and substract the numeral
      in the substrahend from the minuend.

   iv) Continue the process will tens, hundreds', and
      the other columns in the problems.

Example: Substract 346 from 988.

    Step 1 Write the larger number i.e. 988

    Step 2 Place below it the substrahend
          in proper columns.

    Step 3 Start with the units column and
          take 6 away from 8. Record the
          difference (2) in the units column.

    Step 4 Continue in the same manner with
          tens and hundreds.

    Step 5 The answer (642) in the difference
          between the two numbers.

9	8	8
3	4	6
		2
	4	
6		
6	4	2

Rule for checking the substraction of whole numbers.

  i)   Arrange the numerals in the substrahend and the
      answer in columns.

  ii) Add the substrahend and the difference. If the
      difference is correct, the sum of the difference
      and the subtrahend is equal to the minuend.

 iii) Re-check if the answers are not equal. Check first
      the addition. Which is the easiest step. If the
      answers still donot agree re-work the original problem.

Multiplying whole numbers

.Regardless of the number of digits in either the multiplicand
or multiplier, the multiplication processes are the same.

    Rule for multiplying whole numbers.

  i)   Write the larger of the two numbers as the multiplicand,
      the smaller, the multiplier.

  ii) Place the numerals in both multiplicand and multiplier
      under each other in columns, tens in the tens column,
      hundreds in hundreds column, etc.

 iii) Multiply the numerals in the unit column of both
      multiplicand and multiplier. Write the units result
      in units column and carry over the tens.

iv) Multiply the numeral in tens column of the multiplicand by the numeral in the units column of the multiplier. Add the tens reminder to this product. Write the 1st numeral on the right in the result in tens column.

v) Carry over any numeral representing hundreds and add to the next result.

vi) If no other numerals are to be multiplied, write each numeral in the result in the proper column.

vii) Continue to multiply every numeral in the multiplicand by every numeral in the multiplier.

viii) Add the result in each column.

Example: Multiply 156 by 78

Step - 1 Write numbers in columns

Step - 2 Multiply every numeral in the multiplicand by 8.

$$6 \times 8 = 48$$
$$5 \times 8 + 4 = 44$$
$$1 \times 8 + 4 = 12$$

```
    1 5 6
  x 7 8
  ─────────
    1 5 6
  x   8
  ─────────
        8
      4
    2
  1
```

Step - 3 Multiply every numeral in the multiplicand by the numeral in the tens digit of the multiplier i.e. 7

$$6 \times 7 = 42$$
$$5 \times 7 + 4 = 39$$
$$1 \times 7 + 3 = 10$$

```
    1 5 6
  x 7
  ─────────
        2
      9
    0
  1
```

Step - 4 Add the numerals in each digit the result is 12168 so the product of 156 x 78 = 12168.

```
  1 2 1 6 8
  ─────────
```

Dividing whome numbers

Rule for dividing whole numbers.

i) Write the number to be divided as the
dividend within the division frame,
the divisor outside.

Divisor) Dividend

ii) Determine how many times the numerals
in the 1st few digits of the dividend
may be divided by the divisor.

iii) Multiply the divisor by the trail
quotient. The numeral in the units
digit of the divisor is multiplied
first, then tens, etc. The product
is placed under the dividend.

Trial quotient

...)

Place product here.

If the trial quotient is larger than
it should be, the product will be greater
than the dividend when this happens, change
the quotient to the next lower number.

iv) Substract the product from the
dividend.

v) Bring down the numeral in the next digit
in the dividend. If the reminder cannot
be dividend by the divisor, bringdown
the next numerol in the dividend.

vi) Repeat the division process until all
the numerals in the dividend are used.

Note: When the divisor does not divide evenly
into the dividend, the number resulting
from the last substraction is the
reminder.

Express the quotient in terms of the quantities that
are being divided.

Example: Case I. Without a reminder. Divide 1984 by 64

Step - 1: Write as division problem.   64)‾1‾9‾8‾4‾

Step - 2: Determine what the trial
         quotient is. Try (4 x 64 = .256)
         This is greater than 198 in the
         dividend.

Step - 3: Drop the trial quotient back
         to 3. Then multiply the divisor
         by 3 (3 x 64 = 192)

Step - 4: Place the 1st number (3) in   64)‾1‾9‾8‾4‾ (with 3 above)
         the quotient over the proper   - 1 9 2
         number in the dividend.Write   ‾‾‾‾‾‾‾‾‾
         the product under the 1st three
         numerals in the dividend.

Step - 5: Substract the product from the   6
         dividend.

Step - 6: Bring down the next numeral from   4
         the dividend.

Step - 7: Determine the next trial quotient
         in other words, how many times
         will be divisor   (64) to into   - 6 4
         the reminder (64)?   ‾‾‾‾‾‾‾‾

Step - 8: Insert the next numeral (1) in the
         quotient (1x64 = 64). Since thus is
         no reminder, 64 ma-y be divided
         equally into 1984 thirty-one times.
         The answer is 31.

Case 2: With a reminder. Divide 3900 by 47

Step 1: Determine the right quotient
       Try 9. (9 x 47 = 423)

Step 2: Drop back to 8. as 9 is in
       too large.(8 x 47 = 376)

Step 3: Substract. Then bring down the
       next numeral in the dividend.

Step 4: Determine the next numeral in the
       trial quotient. Try 2
       (2 x 47 = 94)

Step 5: Substract 94 from 140. The
       difference is 46, which is the
       remainder.

$$47)\overline{3\ 9\ 0\ 0}\quad{}^{8\ 2}$$
$$\underline{3\ 7\ 6}$$
$$1\ 4\ 0$$
$$\underline{9\ 4}$$
$$4\ 6$$

As there are no. additional numbers in the dividend to be divided, the quotient is 82 and the remainder is 46.

Rule for checking Division.

i) Multiply the quotient by the divisor.
ii) Add the remainder to the product. The sum will be equal to the dividend when the division is correct.

Note: If the two quantities are not equal, first re-check the steps in the checking process. Next, if necessary, re-work the original steps in division.

Division of Decimals.

Division is the simplified process of computing the number of times one number is contained in another. The division of decimals, like all other mat●hematical operation for decimal is essentially the same as for the whole numbers except that consideration must be given to the location of the decimal point in the answer.

Dividing Decimals

Rules for dividing decimals.

i) Place the number to be divided (called dividend) inside the division box.

ii) Place the divisor outside.

iii) Move the decimal point in the divisor to the extreme right. The divisor then becomes a whole number.

iv) Move the decimal point the same number of places to the right of the dividend.

Note: Zeros are added in the dividend if it has fewer digits that the divisor.

v) Mark the position of the decimal point in the quotient directly above the decimal point in the dividend.

vi) Devide as whole numbers and place each figure in the quotient directly above the digit involved in the dividend.

vii) Add zeros after the decimal point in the dividend if it can not be divided evenly by the divisor.

viii) Continue the division until the quotient has as many places as are required for the answer.

Example Case 1 :   Divide 25.5 by 12.75

$$\underset{(4)}{} \quad 2. \quad (3)$$
$$12.75 \overline{) \; 25.50}$$

Step 1: Move the decimal point in the divisor to the right (2 places)

Step 2: Move the decimal point in the dividend to the right the same number of places (2)

Note: Since there is only one digit after the decimal, add a zero to it.

Step 3: Place the decimal point in the quotient.
Step 4: Divide as whole numbers.

Example Case 2: Divide 123.573 by 137.4

$$\begin{array}{r} (4) \\ .8993 \\ 137.4 \overline{) \; 123.57300} \quad \text{add zeros (3)} \\ (1) \quad 10992 \\ \overline{13653} \quad (2) \\ 12366 \\ \overline{12879} \\ 12366 \\ \overline{5040} \\ 4122 \end{array}$$

Module No. 23

WORK EXPERIENCE

By: Shri P.K.Mohanty/
Shri R.N. Rath.

Title of the module :- <u>Methodology of teaching
work experience at elementary level.</u>

Objectives:- To acquaint the participants with the concept
objectives and teaching learning strategy of
Work-experience at primary and upper primary
stage.

Content outline:-

-- Concept of Work-experience as defined in
'National Policy Decument'.

-- Objectives of W.E. at primary & upper primary stage.

-- Syllabus outline as developed at the National level.

-- Teaching-learning process.

-- Rexources for W.E. programme.

-- Principles of evaluation.

-- Sample curriculum units.

Transactional Mode:- Brief presentation followed
by discussion, group work and demonstration.

Time:- 3 hrs.

Over-view:

This module is an attempt to present, in brief, the programme of 'Work-experience' as an integral part of school education. It provides you with the concept of work-experience, its scope, objectives, teaching-learning strategy and your role in its implementation.

National policy of education(1986) has re-iterated the importance of work-experience and accorded to it a central place in the school curriculum. Work-experience, although envisaged as a distinct curricular area, permeates all other academic subjects and hence calls for the involvement of all teachers.

Creativity, productivity and attitudinal development are the major planks of work-experience and 'learning by doing' is its basic feature. This module follows a doing-discussion approach. Its main focus is to clarify the effective modality for teaching work-experience at elementary level.

Objectives:

After going through this module you should be able to

-- Understand the concept, objectives and teaching-learning modality of work-experience programme.
-- lay down criteria for selection of appropriate work-experience activities.
-- locate and seek community involvement in W.E. programme.
-- plan, execute and evaluate W.E. programme on right lines.
-- develop curriculum units for various activities
-- demonstrate some. activities individually

Concept:

In the document of N.P.E., work-experience has been viewed as purposive and meaning-ful manual work resulting in either

goods or services useful to the community and to be provided through well-structured and graded programmes. It would comprise activities in keeping with the interests, abilities and needs of the students, the level of skills and knowledge to be upgraded with the stages of education. The experience would be helpful on his/her entry into workforce.

Stage-wise objectives:

Primary stage (classes I - V)

At this stage of education, the objectives of W.E. come very close to those of education in general. The young children are in-quisitive by nature and enjoy participation in a variety of activities at school, at home and in the community rather than being engaged in bookish education alone. Therefore emphasis should be laid on the development of good health, environmental sanitation and beautification practices through W.E. activities.

One of the aims of education at this stage should be to develop awareness in the children about the world of work through visits to productive & service situation. They should be involved in simple work practice with pliable materials like clay, paper and cardboard etc.

The development of desirable attitudes, values and habits of work, such as appreciation of manual work and regard for manual workers, cooperativeness and team work , regularity, punctuality discipline, honesty, creativity etc. can be achieved through well organised self-expressive service and production oriented activities.

The natural inclination of children is to play. Anything that is new, attracts their attention. Their curiosity is insatiable. An intelligent teacher can exploit this curiosity

to develop and shape their interests, attitudes and skills
in such a way that whatever they learn becomes a part of
their future life. Ample opportunities should be given to
the children to express themselves by drawing figures, pasting
shapes and using colours to make whatever they wish.
No constraint need be placed on the activities of the children.
All that the teacher should do is to provide some paper, some
colours, scissors and a few burshes.

Objectives at Upper Primary stage: (Class VI - VIII)

At this stage, children are reasonably mature to
carryout strenuous work with higher skills which may require
closer co-ordination of hand and brain. They should be
encouraged to participate more intensively in production
processes by undertaking well-designed projects in selected
area of human needs which will mark the beginning of
pre-vocational orientation to the W.E. programme.

The children should also be able to relate their
knowledge of facts and the scientific principles involved in
various types of work. They should learn to apply problem
solving methods and be able to identify and use the tools,
raw-materials and equipment in a scientific manner. The
process of inculcation of positive attitudes and values
should be continued. Besides, the children should develop a
deeper concern for the environment and a sense of belonging,
responsibility and commitment to the community.

Selection of activities:

The W.E. programme centres around six areas of human
needs, namely, food, health and hygine, clothing, shelter,
culture and recreation, and social service. A balanced
selection of activities in each of the areas may be made
according to the educational potential of each activity.

The success of a W.E. programme, to a great extent, depends
on the proper selection of activities. In selecting activities
for pupils, special care should be taken to select those that
are suitable for their level of maturity, satisfy their
curiosity and have potential for developing desirable work and
social values. At the primary stage, a variety of activities
should be made available to the children. The schools can be
provided with an open list with a great deal of variety
suited to the intellectual and physical development of the
children, and the Head of the Institution should exercise
adequate freedom to select a set of 40 to 50 activities which
should be conducted in the time allocation provided at this
stage which should be of the order of 20%.

In selecting individual activities for W.E., the
teacher must keep in mind the fact that the materials
required must be collected from local sources, and as far
as possible, they should be inexpensive. All schools are not
fortunate enough to possess the required facilities and
to provide for new machines and equipment from the market.
Waste paper, rags of cloth, bamboo sticks, straw, kerosene
tins, wooden pieces etc. should serve to meet the requirement
of the class. No great virtue can be claimed for W.E. if
costly, sophisticated items are to be purchased from the
market. This does not mean that those institutions which
can afford to, should not do so. What is important is that
the children should develop the sense of converting the
scrap or waste materials into useful products. This will
inculcate in them a sense that all materials are useful and
whatever can be used will result in economy and prevent
wastage.

By and large, the activities at the upper primary stage should lead to the enhancement of nutrition, health, sanitation, productivity and economic status of the community. Activities in related areas may be sequenced so as to assume the form of a project to be completed over a span of time. The choice of activities and projects should be such that the needs of students and community are met, bearing in mind the maturity level of the children.

Syllabus outline:

The content of W.E. at the primary stage will have three components: environmental studies and application, experimentation with materials, tools and techniques and work practice.

ENVIRONMENTAL STUDIES AND APPLICATION:

These activities should be such that they lead to the development of self-reliance in meeting day-to-day needs and to the improvement of the environment.

EXPERIMENTATION WITH MATERIALS, TOOLS AND TECHNIQUES:

These activities should relate to a variety of materials used for various work practices and should help develop an elementary level of skill in the use of tools and techniques.

WORK PRACTICE:

Primary children are expected to work with pliable and soft materials like clay, paper, cardboard etc. Very sharp tools and heavy equipment are not to be handled by them. After repeated practice with tools and materials, each activity performed by the children should lead to the production of goods and services.

UPPER PRIMARY STAGE:

At the upper primary stage, the content of work-experience will comprise two parts i.e. <u>essential activities</u> for the satisfaction of day-to-day living needs of the children, their families and communities and an <u>elective</u> programme of productive work and services, repeated practice of which may result in remuneration in cash or kind.

The need for giving more intensive skill component to the W.E. programme at the upper primary stage emerges out of the concern for a large number of students who either drop out or opt out of the educational system after eight years of general education and seek their absorption in the would of work and services in the community more or less on a local basis, migration not being a common phenomenon for this particular age group. In view of this the choice of areas of work should relate closely to the production processes existing in the vicinity of the schools and should provide the subject matter of study under W.E. The students should be made well aware of one a more such production processes where they study various aspects relating to the production processes. For example, the cultivation of vegetables may involve not only the study and practice related to the cultivation of vegetables but also their storage, preservation and marketing of the products to some extent. Such a participation in the productive activities in the community would prepare the individual for better participation with greater productivity and it will also provide proper orientation to children so that they can identify their own talents with regard to academic or vocational pursuits.

The purpose of 'Essential activities' is to bring about attitudinal changes and to develop readiness for productive work. The purpose of the elective programmes is to give a vocational bias to the W.E. programme. It may, therefore, require repetition or constant practice according to the time available.

GROUP WORK

Exercise - 1

Keeping in view the objectives and content of W.E. at primary stage, prepare a list of specific activities that can be undertaken in and outside school.

Exercise - 2

Suggest some activities covering six areas of human needs for upper primary stage and discuss the educational outcomes of each activity.

Teaching-Learning process:

The teaching learning process in W.E. has three phases : study of the world of work through observation and inquiry; experimentation with materials, tools and techniques and work practice. The first two are concerned with preparation for actual participation in productive work and services, and the third may lead to production.

In primary classes, study of the world of work through environmental studies should be related to the exploration of productive manual work and service situations at home, in schools and in the community through observation and inquiry. The focus will be on the variety of productive work and services around, workers engaged in them and the materials and tools being used.

In upper primary classes, the exploration or work can be more scientific and the social aspects of work can be further highlighted.

Experimentation with materials, tools and techniques at the primary stage should be restricted to those that are plastic and pliable in nature. The end product may be creative, self-expressional work or some usable things. Services should be such that children enjoy participating in them. At the upper primary stage, manipulation of harder materials like wood and metal may be introduced. Productive work in these classes will take the form of projects in volving higher skills and precision.

Work practice at the upper primary level would involve the mass production of some items prepared earlier under experimentation and also the performance of some services which can be assessed in terms of some return in cash or kind.

The products of the W.E. performed by the children can not be compared with the products of the professional workers. However, such products have an emotional value which componsates for the possible low quality of these products when compared with those produced by the

professional workers. Productive aspect should not be
allowed to take precedence over the educational aspect
and at the same time the productive aspect also should
not be neglected.

In order to realise the educational objectives of
W.E., it is necessary to follow the problem-solving approach.
Children should be made aware of the problems related to
their needs and the work that should be undertaken to
satisfy their needs. They should be led to arrive at the
solution of these problems by discussing the materials,
tools and techniques for performing work and services,
and by undertaking appropriate work. Work-experience
should not be performed mechanically and must include
planning, analysis and detailed preparation at every stage,
so that it is educational in character. Improved tools
and modern techniques should be adopted in the performance of
work-experience activities so that it leads to the under-
standing of a progressive society based on technology.

Resources for work experience programme:

Generally schools have teachers to teach languages,
Science, Mathematics and other subjects. There may not be
special teachers for W.E.. Then who will teach W.E. and
organise activities ? W.E. is the only curricular area where
every teacher of the School can participate. Undoubtedly,
the services of teachers trained in specific trades will
be useful for conducting production oriented activities,
but every subject teacher can think of and plan activities
in his/her subject. Such subject-based activities will help
students in learning by doing.

It is absolutely necessary to utilise community resources for the effective implementation of this programme. Although it is expected that all teachers should work as W.E. teachers, a large number of activities may require specialised personnel. There should be provision in this programme the involvement of experts from the community. While it may be necessary to allocate minimum resources to school, advantage must be taken of the local business enterprises, workshops and work-centres for work-site training.

Group work:

Exercise No. 3

> Think of some Work Experience activities that can be organised by different subject teachers. Make a subject-wise list of such activities.

Exercise No. 4

> Think about the resources available in the community that can be tapped for launching work experience programmes in your school. prepare a list of resources (Men, Materials & Work-sites)

Evaluation of pupils:

The entire evaluation in the area of work-experience should be a continuous process for all stages of school

education. The evaluation should be internally conducted
by the teacher/teachers of the subject and should be shown
on the performance record of the stuvent. It should take
care of theory and practice in an integrated manner but
more weightage should be given to the evaluation of
actual practical work. It is expected that in the evaluation
of students' performance, while paramount importance will
be given to attitudinal development at the primary stage,
skill development should receive more and more weightage
at higher stages. This will have to be reflected in the
weightage assigned to the dimensions in terms of time and
marks. It should be remembered that W.E. is pre-dominantly
a 'doing' subject and, therefore, actual work performance
should receive maximum attention here. Some of the
important dimensions of evaluation are as follows.

A) · Attitude towards the work:

    1. Dignity of labour
    2. Respect for work and workers
    3. Initiative and interest
    4. Social commitment
    5. Discipline
    6. Co-operation

B) Project or practical work

  (a) 1. Selection of materials
    2. Selection of tools
    3. Proper use of tools
    4. Techniques adopted
    5. Accuracy and finish
    6. Cost estimation
    7. Saleability of the product

Q·R

(b) 1. Social service
    2. Participation in the activity
    3. Organization of work
    4. Leadership .
    5. Efficiency in execution

Teachers should keep systematic records of pupils' progress in W.E. Apart from the teacher's record, each student may be asked to maintain his/her work-diary. Students should make necessary entries in the diary after completion of every unit of activity. For internal assessment, a well designed plan of continuous,comprehensive evaluation, using worthwhile evaluative criteria should be prepared. Assessment may be made and recorded after every operational stage of activity/project or its completion.

Group Work

Exercise No. 5

Discuss and prepare a comprehensive but practicable evaluation proforma for adoption in elementary school.

SAMPLE CURRICULUM UNITS

(No. 1)

1. Classes :: III - V
2. Area :: Community work & social service
3. Sub. Area :: Community work inside the school
4. Title :: Maintenance of cleanliness inside the school.
5. Need and scope ::

Inculcation of values such as dignity of labour, self-help, sense of responsibility, social sensibility are necessary for adequate development of the personality of the children. Maintenance of cleanliness is a suitable activity for the development of these values in them.

The scope of the project includes sweeping and mopping inside and outside the class room, dusting and arranging of the furniture, cleaning of the black boards and using of the dustbins.

6. Objectives:

i) To develop in the children the sense of shared responsibility, dignity of labour and work for others.

ii) To help children develop social sensibility and sense of commitment to the school community.

iii) To encourage the development of new attitude conducive to healthy living.

iv) To develop good hygienic habits through participation in mannual work.

v) To inculcate sense of self-reliance.

vi) To develop proper understanding of the principals of clean and healthy living.

vii) To develop a taste for good and decent life.

7. Organisation and Management of the project.

7.1 Methodology:

The teachers, the pupils and the members of the community form an organising committee. They will prepare a list of work items to be executed. Thereafter duty chart may be prepared. This should be a regular activity of the school throughout the year and form a part of the class time-table. The execution of the project will be a joint responsibility of all the students and teachers and no one should be granted exemption on the basis of socio-economic status or sex.

7.2 Tools, Equipment and materials etc.

Brooms, duster, dustbins, buckets, locally available disinfecting and cleaning materials and a proper place for keeping them in order. Brooms with long sticks and dusters with sticks should be preferred, because in that case the children will not have to bend down.

7.3 Time schedule: Half-an-hour daily

8. Break-up in doing learning units

8.1 EXPLORATION:

. The pupils will explore the needs in respect of cleanliness of class room, verandah, sthool compound, sanitation block. They will also explore suitable places for the disposal of garbage and waste water.

8.2 EXPERIMENTATION:

The students will try different methods of sweeping, mopping, dusting, arranging the furniture, spraying, sprinkling etc.

8.3 WORK PRACTICE:

They will regularly follow the best method, discovered through experimentation.

9. SEQUENCE OF OPERATIONS:

    i)   Planning of the work
   ii)   Survey of the cleanliness of the school
  iii)   Obtaining tools, materials etc.
   iv)   Preparing the time-schedule
    v)   Distribution of duties
   vi)   Carrying out of the work
  vii)   Evaluation
 viii)   Follow-up work

10. PROBABLE OUT COMES:

10.1: The students will learn how to keep their class-rooms and other portions of the school clean. They will acquire the skills in dusting, cleaning, washing, sweeping and arranging things etc.

10.2: They will learn the need and importance of keeping the environment clean.

10.3: They will develop sense of self-help, self-reliance, co-operation, etc. Thus a number of attitudinal changes will take place in them.

11. RAMIFICATION IN OTHER SCHOOL SUBJECTS:

Language

As the students have to discuss at the planning, execution and evaluation stages of the project, they are likely to develop oral expression. They will also learn a number of new words concerned with the cleanliness.

Arithmetic

The students will practise work and time calculation with the help of various operation involved in the work.

Social Studies

The students will develop social and civic sense.

12. LINKAGE WITH DAY-TO-DAY LIVING:

The programme is directly related to the day-to-day living of the child in the home, school and community.

13. EVALUATION:

The evaluation work should be carried on at three levels, i.e

i) by the teacher,
ii) by the children and
iii) by the parents and community members.

The teacher will have to note the behaviour of the children as also the skills learnt by them in the above mentioned areas as an individual and as a member of the team.

Keeping of anecdotal records of students' behaviour will be of great help to him. The students will have to maintain diary of daily work and experiences gained alongwith their reactions. The community members and parents involved in the organizing committee may be consulted while assessing pupils behaviour and participation.

14. SUGGESTION FOR FOLLOW-UP WORK:

The teacher should keep contact with the parents to know the extent up to which the skills, attitudes and values acquired by the children in the school are being reflected in the home situations.

1. Class   ::   VII
2. Area   ::   Shelter
3. Sub-area   ::   Wood work
4. Title of the project   ::   Making of a name plate.

5. The Need and Scope of the Project:

It is necessary to identify the dwelling places. This project provides scope for (i) shaping flat wooden pieces, (ii) preparing the surface for painting, (iii) Painting letters and numerals on wood and (iv) fixing of fixtures when the name plate is ready.

6. General Objectives

Enabling the pupils to

  6.1.   realise the need of indicators;

  6.2   design products according to their purpose and availability of resources;

  6.3   develop basic skills in manipulating wood and paints;

  6.4   evaluate process and product;

  6.5   develop self-reliance.

7. Organisation and management of project

  7.1   METHODOLOGY

With the help of discussions, the pupils realise the difficulty in identifying dwelling places which do not have any indicator. As a part of environmental study, they study different devices used marking dwellings and they discuss the merits and demerits of these. They discuss the

criteria of designing the name plate and selecting the
raw material for making it. They observe the carpenter
and the painter at work. They also observe the demon-
stration given by the teacher. The discuss the nature of
working, correct use and maintenance of the material and
the tools used in the project. They also discuss the
process of executing the project, the safety precutions
that have to be observed and the procedure of evaluating
the process and the product. Finally, they collect the
materials and tools, execute the project in group work
and evaluate the process and the product.

7.2 MATERIALS, TOOLS AND RESOURCES REQUIRED

Boxwood from spare packing boxes, wooden planks
or ply wood about 30 cms. x 12 cm. x 1 cm. Nails or screws
(3 cm. long)-2, Hooks-2, Polish, Paints and sand paper.
Rule, try square, hand saw, marking knife, smoothing plane,
rasp, screw driver and painting brush, services of
carpenter and painter for guidance.

7.3 TIME REQUIRED

4 periods of 40 minutes each.

8. Doing-learning Units

8.1.EXPLORATION

8.1.1.Observation of name plates and sign boards in the
neighbourhood for different designs.

8.1.2.Observation of carpenter engaged in marking, cutting,
planning, shaping, finishing wood and the painter
engaged painting.

8.2. EXPERIMENTATION

8.2.1. Planning

8.2.2. Procurement of materials and tools.

8.2.3. Shaping and finishing for different designs.

8.2.4. Paining in different colours or fixing of prepared letter.

8.2.5. Fixing of hooks and display

8.2.6. Evaluation and cost calculation

8.3. WORK PRACTICE

The pupils take orders for name plates and execute them.

9. Sequence of operations:

9.1. Designing of the name plate, in rectangular, circular or oval shape.

9.2. Preparing the bill of material and list of tools required.

9.3. Collection of material and checking of tools.

9.4. Preparing the wood for marking.

9.5. Marking the job on wood.

9.6. Cutting to shape.

9.7. Finishing

9.8. Polishing

9.9. Painting of letters or fixing of prepared letters.

9.10. Fixing hooks and display the plate.

10. Probable outcomes

10.1. The pupils are able to realise that (i) a name plate is more convenient for indicating the dwelling, (ii) wood is a suitable material for

making name plates, (iii) generally the name
platesare rectangular, (iv) 30 cms. x 12 cms. x
1 cm. is a good size for a name plate. They
develop the habit of marking and labelling.
They do not disfigure the name plates.

10.2. They recognize teak, pine, kail and ply wood.
They also recognize rule, try square, hand saw,
smoothing plane, polish and paint and know-how
to use these.

10.3. The pupils are able to determine the shape and
size of the name plate and use smoothing plane,
rule, try square and marking guage for preparing
wood and marking it. They know the parts the
tools, how to use them correctly and maintain
them properly. They appreciate the importance
of working methodically and accurately. They
acquire basic skills in the use of hand saw
and smoothing plane.

10.4. The pupils are able to cut wood along straight
lines, and smooth the e edge with rasp and sand
paper. They know that wood has grains (xylum)
and planing has to be done along the grains and
not across.

10.5. The Pupils are able to polish wooden surfaces and
apply paint in the desired design. They know
that polish stains wood and gives glossy effect.

Paints cover the surface with protective pigments. They appreciate maintenance of wooden surface with polish and paints.

10.6. The pupils are able to fix hook, check the proportion of the length and breadth of the rectangle, correctness of the shape, size, smoothness, application of polish and paint, shape and size of letters and display the name plate. They also calculate the time taken and compare the performance of the fellow pupils. They are able to calculate the cost and estimate wages. They learn marketting skills.

10.7. They develop more speed in work and better management abilities as they execute work order. This unit could be taken up as a group project. They compare the individual and group method of working and thus realise the advantage of co-operation.

11. Ramification in Other School Subject:

11.1. Drawing

11.2. Language

11.3. Arithmetic.

12. Linkage with Day-to-day living

Somebody or the other has to identify the dwelling often.

13. Evaluation by the Teacher, Pupil and Community.

13.1. The teacher observes the pupils at work and helps them, if necessary, in marking correctly and using the tools properly. He observes the posture and method of working as well as the final products.

13.2. The role of the boys in evaluation have been explained under 10.6.

13.3. The community may also periodically evaluate the work done and suggest how to improve the work.

14. Suggestion for Follow-up Work in the Home or Community.

14.1. The children may observe different types of name plates and give a fresh look to their own name plate when they get worn out.

GROUP WORK

Exercise No. 6

Select some projects/Activities both for primary and upper primary stages and develop curriculum units for them

Minimum Level of learning with special reference to Mathematics.

Sri G.S. Hati.

•••••

An Indian classroom is always a hetregeneous one. It includes students of varying abilities, interests and attitudes. But there is only one syllabus for all these students. On the basis of the syllabus, a text book is followed. If one goes through a text book written on the basis of the objects specified in a syllabus, one student has to learn many things with respect to a unit/chapter. For example, if one has to learn addition in standard II of the primary-level according to the syllabus prescribed by Board of Secondary Education, Crissa, one has to learn;

    a)   addition of one digit with two digit number.

    b)   addition of two digit with two digit number .

    c)   Easy problems on addition

    d)   Difficult problems on addition

    e)   Row addition

    f)   Associative property of addition

    g)   Commutative property of addition

    h)   Difficult problems on these two properties.

as   mentioned in the text book:

But all these concepts/process/skills on addition are not equally useful for higher studies or application in daily life. Out of the above, let us take some examples:

Problem No.1:Ram has 5 sticks more than Rahim. But John has 2 sticks less than Rahim. If Rahim has 15 sticks, how many sticks are there is total with Ram, Rahim & John?

Problem No.2: Ram has 5 pencils. Hari has 2 pencils more than Ram. How many pencils are there with Hari ?

Out of the above two problems, Problem No.1 is very much appropriate for bright students. But Problem No.2 seems to be required for all students in grade II.

Similarly all students may not require to solve problems like: $50 + (60 + 75) = (50+60) + (? + 15)$

Similarly in a subject like English the teacher may have the objective of teaching students 10 new words/phrases in a unit, but on the basis. of usefulness, 5 words may be the minimum which should be acquired by lazy student of a particular class.

In a subject like science, the teacher may teach many concepts on a particular topic like cleanliness but from students' point of view, the child must know the following;

i) how to take care of eyes, ear, skin, teach

ii) what will happen if these are not taken care of

All the above illustrations indicate that though a teacher has to teach many things related to a topic but in practice, he need not be enthusiastic to achieve each from every student. Instances are time, where teachers of English complain that students do not know the simple use of tenses (indefinite) at Class VIII. Similarly .teachers of Mathematics explain for students' inability to add simple fractions like 1/2 and 1/3 in class VI. All these indicate that are, the teachers emphasise all objectives while evaluating the child; but are not sure of some minimum concepts/skills to be acquired though a particular unit in a particular class. This has led to the inability on the part of students to follow in higher classes resulting in disinterest, poor achievement and detention. Hence it is high time that a teacher before proceeding to the next unit, must be sure that the students have achieved some minimum level. This minimum level has to be decided by a group of experienced teacher. Even the inexperienced teachers may prepare tests for minimum level of learning for each unit/chapter. It will be ideal if readymade tests on minimum level of learning for each unit are available with each school for immediate use on the part of teachers in a school.

This will help the teaches to identify the weaknesses on the areas of minimum level of learning on each unit and take necessary remedial measures. In fact, it is difficult to apply

remedial measures on the basis of weakness located through
diagnostic tests covering all objectives related to a unit. But
is within the reach of the teacher to e adicate the weaknesses
detected through a test on minimum level of learning. In reality,
it will be wise on the part of teachers to make a nice blend by
grading diagnostic test into two parts; one for testing minimum
level of learning and the other to test other important aspects
of the unit.

Module 25: Action Research   By: Dr. S.P.Anand.

Objectives: The module on Action Research helps the reader to:

- know what is research:
- understand the importance of educational research;
- have the clear perception of action research in education;
- highlight the importance of action research for teachers as well as for the process of education;
- spell out the strategies for the motivation of teachers to undertake action research projects;
- cite specific problems which can be taken by teachers as action research problems.

Contents: Research

Research in Education

Action Research

Action Research and Teachers

Motivation of Teachers for Action Research

Problems for action research

Duration : One hour

Mode of Transection: Discussion and Participation of participants.

Research:

Traditionally, research has been acknowledged as an area of intellectual exercise in the pursuit of establishing fundamental truths of life. It is considered to be the domains that is enclusively meant for and reserved for intellectuals only. Research, as such, has been virtually viewed as the seat of wisdom.

Research is a thoughtfully speltout, systematically designed and very intelligently conducted creative activity.

In modern. times, research has become a part and parcel of each and every human engagement. Research and Development (R+D) constitutes an important wing of well established institutions, organizati ns and of all types of worthwhile establishments. There prevails a furious research culture in all walks of present day life.

Research leads to innovations. Research results is now theories and inventions. Efficiency is enhanced and productivity is accelrated by research programmes. Civiliza- tion of the day in all its facets is accredited to research of one kind or of another kind.

Research is an insightful learning. It is a passion for learned people. A creative mind finds its real life in his research programme. In the quest of pursuing for an ultimate excellence in human life, research is a momentous movement of research oriented people.

Research is like a mission of missionary like people to render a humane service to humanity in the best of its misionary like spirits.

Research in Education:

Education has come to function as a specific process being conducted by the society specifically for the desired allround development of children. In this character-building man-making process, there are many pertinent questions which have been very successfully answered by the research workers engaged in educational research. It is on the basis of research findings in education that vital learning theories. have been developed, methods of teaching have been arrived at and rational guide lines for curriculum construction have

been chalked out , 'for the children of different age groups.
The pedagogy has been sumptully benefitted and enriched by
research in Education.

With its valuable contributin, educational research
has come to establish the process of education as a scientifi
phenomenon. Research in Education has come to acquire a
place of fundamental importance in the entire spectrum of
research activity in the society. Research in the field of
Education is recognised as equally challenging and fascinat-
ing to the educational reser-rchers as it may be found by
researchers engaged in any other discipline of knowledge.

Till recently, research in Education has been the
domain of research workers who themselves are not actually
engaged in the process of education. They are not field
worker in education in the real sense of the word. These
research workers have produced and gone to supply a good
amount of valuable research findings to the consumers of
these findings who are really practising the process of
education. These out of the field research in education
have laid emphasis upon what the teachers should teach
and what not to teach, how to teach and how not to teach,
who should teach and who should not teach. The kind of
research pursued by theseresearch workers has come to be
known as pure-research, fundamental research, normative
research and historical research. The value of the contri-
bution made to the process of education by these type of
researches can hardly be undermined by any one. Actually
these rese-rch have built up the modern system of education
as such.

Action Research:

Action research in Education is more or less a recently
introduced movement in Education. In this type of research,
teachers teaching and educational administrators in schools
and colleges themselves are found to be involved in research
in Education. Action research is the research in which pra-
ctising personnels in the process of education arrive at
systematic designs of research into the problems that they
them-selves happen to face

> "Action research is focussed on the immediate appli-
> cation not on the development of theory, nor upon ~c
> general application. It has placed its emphasis on
> a problem here and now in a local setting. It findings
> are to be evaluated in terms of local applicability,
> not in terms of universal validity. Its purpose is
> to improve school practices and, at the sometime,
> to improve those who try to improve the practices:
> to combine the research function with teacher
> growth in such qualities as objectivity, skill in
> research process, habits of thinking, ability to
> work harmoniously with others and professional
> growth". - John W.Best (1982, .22)

Action research in Education is the research pursued
by the active classroom teachers and educational administra-
tors. This is the research pursued by these persons of
education which is essentially the outcome of their felt
need. This is the result of their concern for personal
growth as well the teaching profession as such. Action
researchers passionately analyse the problems that they
themselves come across in their day-to-day working in the
process of education.

Action Research and Teachers:

Action research is the real research in the sense that
the need of it is felt by the practising teachers and they
themselves involve themselves in this kind of educational
research. These researchers are actually teacher researchers
who conduct the research and test the validity of its results
by implementing them in actual and real situations. These
action researchers are supposed to have real perspectives of
their research problems at hand. They have an insightful
hypothesis to the problems, too.

Action-research teachers get into the investigation of
their problems when they get themselves identified with the
problem. They work with an urge to understand the problem,
find its solution and improve upon their teaching efficiency.
It adds to their personal efficiency and competency in their
teaching profession. These action research workers in the
successful completion of their piece of research work acquire
self-confidence and self-reliance. It gives them ample
satisfaction to work as teachers with accelerated enthusiasm.
Such like action-research oriented teachers make a headway
in their personal as well as in professional growth while
still more adding an element of effectiveness to the process
of education as a whole.

Teachers involved in action research are deemed to be
conscientious teachers, responsible teachers who have the
will to discharge their professional obligations as sincerity
as best may be ever thought of by any one. Teachers who
cherish no inklings for studying their day-to-day problems
in teaching may be taken as devoid of their real love for
the teaching profession. They may not be the keen observers
of teaching-learning situations in which they actually work.

Action research is to be taken as side-by-side activit
of the teachers in their teaching activity. This activity nee
not be imposed upon teachers but may be self-imposed essentia
programme accepted by teachers themselves. And for this
teachers need by duly motivated for undertaking action
research programmes in their respective schools.

For all practical purposes, teachers in their own
interest and in the interest of teaching profession as such
should have a·fascination for action research. Research in
Education when it is supplimented with the research of tea-
chers, it becomes really a research of practical utility.
Research in Education not supported by action resea-rch
remains to be the research for only research sake without
much of its findings being taken care of in teaching-learning
situations. Research in Education becomes a meaningful
research when it is meaningfully associated with action
research which is essentially conducted by practising
classroom teachers and educational administrators of
schools.

Teachers need by fascilitated and motivated to examine
their day-to-day pertinent questions with a research-oriented
bent of mind. They should be encouraged to develop an atti-
tude of mind to analyse their classroom ticklish problems
in very systematic research like lines.

We may have pre-service courses of studies for action
research at the very threshold of teachers joining the tea-
ching profession. In-service, they may not be over-loaded
with routine classroom teaching and with other school
duties that they should loose sight of any programme of
action research expected from them. Orientation courses
and consultancy services may also be made available to

teachers who come forward to get into action research. Head
of the Institution, Headmaster/Principal may always be expected
to be competent and willing to serve as a good guide so
easily and immediate available to teachers that they never
loose track in their action research. Actually heads of
institutions should instil an inspiration amongst the teachers
for action research. The headmaster may arrive at his own
design of team action research in which a team of teachers
may make an intensive, joint coordinated and cooperative
endeavour.

Financial aspect of action research can not be easily
overlooked or set aside without being properly attended to.
Teachers involved in action research or ready to enter into
it, may need financial support their constructive pursuits.
Although a close scrutiny may be very much desirable before
sanctioning financial assistance to the teachers for their
action research projects but this all should be done with
an open heart and supporting attitude towards teachers
who come forward for action research. However, a true action
researcher should never mind and have the pleasure of financ-
ing his research from his own pocket. He should take it as
the most right type of investment for his personal growth and
satisfaction. A true researcher does not and should not
depend upon the mercy of people who matter in sanctioning
financial grants to their proposed research projects. A
research should be taken as a mission towards which a
sacrifice of some money must be taken as a matter of privilige
and joy. NCERT, UGC and CSIR have elaborate programmes and
schemes to finance research projects. Such like schemes need
also be incorporated in the schemes of DIETS.

Teachers need be felicited for conducting action research of a wider and universal appeal and its application. NCERT runs a seminar Reading programme for action research projects and selected projects are warded a merit certificate of National Award with a prize money of Rs.1,000/- each to the research worker. Such like schemes of rainforcement need be launched at State and District leveles, too. Action researchers should get incentives in the form of additional increments and out-of-turn promotions in their professional careers. All the more, State should give a wide publicity to the deserving action research projects as they might really deserve.

Problems for Action Research(Illustrations):

There can be a long list of problems which the working teachers may be experiencing in their day-to-day work. As for example, some of the problems may be cited as :

1. Study habits of students
2. Student's motivation for studies
3. Students' attitude towards studies
4. Influence of environmental factors on the personality development(: bit for motion) of children.
5. Reasons of students coming late to the school.
6. Causes of students remaining irregular in the school
7. Student's likings for each other
8. Students' likings for teachers.
9. Students' family background.
10. Students' perception of teacher's style of teaching.
11. Student's perception of headmaster as their wellwisher.

12. Student's attitude towards hometask.

13. A study of student's pressing problems.

14. Student's love for home.

15. Student's love for the school.

16. Student's likings for school programme.

17. Students' complaints against the teachers.

18. Students who need special attention on the part of teachers.

19. Identification of handicapped children.

20. Identification of talented children.

Student who is found to be a problematic student, a difficult student may be brought under case study.

Experimental designs like the ones mentioned below can also be thought of under Action Research:

1. Impact of personality of the teacher on the learning of students in terms of their academic achievement.

2. The evaluation of a method of teaching as compared to another method of teaching the same subject and to the same age-group of learners.

3. Teachers' attitude towards teaching and students' learning thereof.

Such like small research designes can be arrived and conducted by the teachers. However, they need a little bit more of guidance and supervision to work over experimental action research projects as compared to this need while having non-experimental problems under investigation. Steps in Action Research:

Statement of the Problems:

The teacher visualizes the problem. He conceptulize it in its real perspectives. For this he may make a little

bit of survey of literature related to the problem at
hand. He gets at the real footings of the problem. His
·discussion over the problem with his colleagues helps
him have the clarity of the problem. It enables him to come
out with a clear statement of the problem.

For an example, the teacher may be observing the
students not finding duly inclined towards their studies.
He may mark students indifference towards studies. Students'
poor academic achievement may support teachers' contention.
Now there can be many reasons for students' failure to make
achievement in studies. Here, the teachers may like to study
students overall placement at studies. Now, in this context
one relevent aspect may be to study students' attitude towards
studies. Here, it may be noted that students' attitude towards
studies may be influenced by many factors. But for the action
researcher teacher, here he is only concerned with the factual
study of students attitude towards studies. He is not concerned
for the factors building up or not allowing to build up a
healthy attitude of students towards their studies. So, he
comes to illustrate the problem, as, a study of Students'
Attitude towards studies.

A hypothesis illustrates an answer to the research
problem which the researcher thinks it to be by virtue of
his insight into the problem at hand. A hypothesis is a
tentative answer to the problem with which the researcher
comes to pursue his research study. A hypothesis is an
answers to the problem which the researcher examines it for
its acceptance or rejection as may be found logical on the
basis of the evidence provided by the findings of the
research at its end.

In the above cited study, the teacher has undertaken this study with the motion that students fail to make academic achievement up to his expectations because of their lack of desirable and healthy outlook towards studies. That means teacher thinks students cherish a poor attitude towards studies. For this, the hypothesis for this problem shall be formulated as:

"Students lack a desirable level of attitude towards studies".

Sample:

For the study of any research problem, it is not feasible and not required to include the total population of students. Statistical techniques help us to study the problem over a small population known as sample of the study. For the sake of our present problem we may say, the sample the study shall be constituted by students of Class V of 4 neighbouring schools.

Tools and Techniques:

Tools and Techniques are the wheels of a research programme. The researcher to begin with initiates his work with his research into the tools and techniques suitable for the study of his problem. He may like to be conversant with the tools and techniquenes available to serve his purpose. He may pick and choose any of them or may get an idea to develop his strategy to conduct the research problem at hand.

At elementary school level, we have to conduct our action research with the help of interview of students and their parents. An interview schedule may be developed with mutual discussions amongst members. Students' attitude towards studies may be studied by asking students questions

It is believed that we should not shirk using statistics to analyse the data but also we should also not be over enthusiastic to apply statistics for merely giving the data a statistical treatment. We should be rational in our approach. It is well advised that the researcher may read some research reports to be conversant with the right type of style for making meaningful interpretation of his data. The interpretation must lead to refute or accept the hypothesis with which the researcher might have started his research work.

Practical Implications:

Findings are alright but the researcher should also draw practical implications of his findings of the study. A record of practal implications makes the research study useful to one an all who are really interested in the improvement of teaching learning practices in a system of education.

Module No. 26

DIAGNOSTIC TESTING AND REMEDIAL
TEACHING WITH REFERENCE TO MATHEMATICS

Sri G.S. Hat:

Many schools conduct turotial and annual examinations
for the purpose of assessing the achievement of students.
The results of those examination are mainly used to assist
the Head of the institution to know whether a child is fit
to be promoted to the next higher class. But these do not
help greatly to the teacher to give feed back to the child
for further improvement. A teacher must know whether he
has been successful in teaching a particular unit before
he moves to the next. A diagnostic test can alone serve
this purpose.

After reading this module we will be able to :

- aim and need of diagnostic test.

- state how to construct a diagnostic test.

- state strategies for remedial teaching.

Diagnostic testing & Remedial teaching

Diagnostic tests in school subjects aim at
identifying the strengths and weaknesses of an individual
child in a specific area like profit and loss, pressure of
liquid etc. These tests widely differ from achievement tests.
For example the test used to measure achievement at the
end of the year contains few selected questions from each
chapter/unit but does not contain all vital aspects of
each unit. It gives an overall picture of the achievement

of the child in the subject. Moreover, it may help the school to decide whether the child will be promoted to the next higher class or not. But it fails to give a complete picture of the specific strengths and weaknesses within a unit/sub-unit. On the other hand, diagnostic tests serve this purpose fully and include all aspects covered in a particular unit/ sub-unit. The purpose of this type of test is also different. This test has nothing to do with promotion; it helps a teacher to know the specific strengths and weaknesses of individual child just after completion of a unit/sub-unit so that he can take necessary steps before proceeding to the next unit. It is very much required as weaknesses in a unit of an individual child will hamper the learning of subsequent units seriously. Hence a diagnostic test for each is a must for every teacher.

Construction of a diagnostic test:

To construct a diagnostic test in a unit in a school subject, the teacher must thoroughly go through the content and processes involved in the unit. On the basis of this he must divide the unit into some major concepts and then each concept has to be further devided into sub-concepts. Then questions will be framed on each subconcept. However, a diagnostic test does not give any rigid time limit to answer it only instructs students complete as soon as possible. It also spells clearly to the children that it has nothing to do with examination/marks. So children answer the question without fear/malpractice. They are further told that once their mistakes are identified, steps will be taken to remove them. This motivates them to take the test seriously.

Here is an illustration from Math. on writing the major concepts, subconcepts and questions for a diagnostic test on addition-numbers.

Major concept	Subconcepts	Question
1. Addition of one digit with one digit number.	a) One digit with one digit whose sum is 10	3 +4
	b) One digit with one digit whose sum is 10	7 +5
	c) One digit(No zero) with zero	5 +0
	d) there one digit number	3 4 +7
2. Addition of one digit with two digit number.	a) One digit with two digit with carrying.	17 +5
	b) One digit with two digit without carrying.	5 +11
	c) Row addition of one digit with two digit.	5 +16
	d) two one digit with one two digit.	14 +6
	e) two one digit with one two digit (Row addition)	4+13+5 = ?
3. Two digit with two digit	a) two digit with two digit without carrying.	12 +25
	b) two digit with two digit with carrying.	25 +37

4. Verbal problems

(Here different types of problems are to be identified depending on the pattern.

a) Problem with addition of case.

a) You have 2 chocolates your brother gave you 3 cholocat What is the total number of chocolates.

b) Problem will addition of two cases.

b) Sita has 2 rupees. Hari has 3 more than Sita. How much do they have in total.

c) Problem with additional of 3 cases.

c) Gopal has 3 books. Rahim has 1 book less than Gopal and John has 1 book more than Rahim. Find out the total no. of books of Gopal, John and Rahim?

After this, questions may be framed on the sub-concept These questions may be short answer or objective. Then the questions are to be analysed in order of difficulty so a diagnostic test contains directins for the test followed by questions on the unit.

After the test is administered, answer are evaluated and the responses are included in a two dimensional chart as mentioned below.

Response to question No.

Roll No.	1	2	3	4	5	6
1						
2						
3						
4						

The above is student-response chart of a dignostic test with 6 questions administered over 4 students. In the above chart, it is oberved that all the students have answered Q.No.2 and 6 correctly. Q.No.1 , 5 and 3 have been answered correctly by some students and nobody has answered the question No.4 correctly.

It is now necessary to locate the reasons for weakness in the students. The reasons sometimes may be clead from the response or sometimes it requires interview with the individual child.

After locating reasons, remedial teaching may be planned and arranged as below.

i)   For Q.No.4 the teaching may be applicable for all students.

ii) For Q.No.3 remedial teaching in smalll groups is required. However if reasons are different they may require individual teaching.

iii) For Q.No.1 and 5 individual remedial teaching is requested.

Diagnostic tests also reveal the weakness of teacher in teaching a particular sub-concept. This test gives a good feedback so that the teacher modifies the strategy/ methodology in subsequent years..

Like this diagnostic tests in other subjects may also be prepared. Common errors committed by students during class work, in home work and whole delivering a lesson help a teacher a lot of list the proper subconcepts and prepare valid questions for a diagnostic test.

As diagnostic test is a must for a teacher for each unit on every subject, it is desirable that a group of experienced teachers in the subject area may meet together to decide the major and subconcepts and prepare questions for a diagnostic test on a unit. If units in a subject are distributed among different schools of the locality for construction of diagnostic tests and then reviewed by experienced teachers and experts to give a final shape to the tests, then these tests can be used by all the schools of the locality for many years as these have nothing to do with marks.

Module No. 27

SCHOOL - COMMUNITY RELATIONSHIP

Dr. S.C. Panda

Overview

    Community is an organised form of political, municipal or social unity. It is a body of persons living in the same locality, or with a common race, religion, pursuit etc. Consists of different kinds of human groups and each and every individual of the locality becomes a member of that community because of his birth, habitation or presence. School is part and parcel of the community. It is one among many social institutions within the community which plays a very significant role to bring out socially desirable modifications with the learner's behaviour through its controlled efforts and endeavour.

    This module aims at developing awareness and insight among teachers in regard to various kinds of participation of the community in educational programmes. Efforts is also made to enhance the teacher's ability to enlist support of the community for successful implementation of the educational programmes.

    Here the community consists of a group of people with common interests and needs in promoting the cause of education within their place or village in particular and locality in general.

    All of us have been working for the promotion of both formal and non-formal education. And for its effective implementation we always seek the cooperation and participation from the members of the community where we work. Our past experience shows that the government agencies are not that capable of promoting education to the level of expectation. We have to have sufficient community support

and prepare sufficient ground for that support to achieve the desired educational goals. No doubt the government has to increase the educational opportunities quantitatively but quality can not be lost sight of and can only be achieved through active participation of different agencies (government and private) with that of community. Hence, the participation and involvement of the community is very essential for successful implementation of the educational programmes.

Objectives

After completion of the trining programme, it is expected that you will be able to :

- Know and understand the meaning and types of community and community participation.
- Identify the available resources and areas in which community participation is essential and its feasibility.
- Understand the basic aspects of community like social life and civic responsibilities in school climate and community as well.
- Analyse the causes of insufficient community participation in educational programmes, and take remedial steps.
- Realise the need for community participation and the role of pupil-teacher relationship in particular and school in general in maintaining better community relationship in educational programmes.
- Realise the educational needs of the community and study the activities and worth of coming closer with the community.
- Practice some methods of community contact and drawing effective participation.

Learning Activities

Community participation in education system has been emphasised by many philosophers, sociologists, psychologists and educationists. They feel it as an integral part of education system. Our national government has also emphasised it from the beginning. As a teacher you must have realised also its importance in day to day teaching learning process. In various activities you must have felt the need of participation of the community.

It is commonly believed that any help rendered by the community in any manner is community participation. But the community participation has got more wider scope.

It indicates the involvement of the community, special contribution of the community, specific help rendered by the community. Support in some specific activities in different educational programmes carried out in different spheres of the community at different times. The involvement of the community has got much wider scope in comparison just to participate in certain educational activities. Let us try to understand and realise these aspects in a better way.

Activity Sheet No.1

Try to understand the meaning of community participation and its types,	Collect Collate Discuss

In many a occasions the presence of the community members play a vital role in the frame work of educaticnal programme. It is not always necessary that they should keep themselves deeply engaged in the activities undertaken by the school. Their simple attendance encourage both the teacher and taught, they advise the students, enthuse the students on the need of involvement of the students in

day to day activities (curricular, co-curricular and extra-
curricular). The utilization of expertise available in the
community enriches the school climate. Through communication
between the school and community which is a two-way traffic.
Thus the community participation becomes a process of sharing
expertise with each other. The involvement or the partici-
pation of the community in the educational programmes of the
school are of different types depending on the contexts,
condition or situation. Thus participation may be categorised
as :

1. <u>Voluntary or Spontaneous</u>

Person from the community, who volunteer out
spontanueously to participate in the school activities
without any external support or force (Ex- If it is
realised to have a school in the locality and it was
decided to raise funds and materials to send their
children to school).

2. <u>Compulsion</u>

Persons from the community, who have to participate
under certain compulsions. Its violation may cause
certain coercion. (Ex- If the parents are forced to
contribute for the development of the school or else
their children will not be admitted to the school).

3. <u>Sponsored</u>

Persons from the community, who participate because
of some mendate or official endorsement. No external
force is applied, but external support is being
provided. (Ex- If the community is persuaded by some
authorities for the purpose or some matching grants
would be made available for the building, material
or staff, it may be considered as 'sponsored'
participation).

In a democratic country like India compulsion in the area of participation is neither desirable nor advisable. Voluntary participation is the most desirable and agreeable one as it will be more durable and satisfy the ideal of cooperation and participation.

Being aware of the meaning and types of community participation we will be able to know the need of community participation in educational developmental programmes which are community based. Many times you may have realised the need for the support from the community in some situation where government support is not that sufficient. Let us try to recollect such situations and discuss the need for community participation in educational programmes .

Activity Sheet No.2

Reflect some situation from your experience where you felt the need for community support/participation.	Collect Collate Discuss

School is an integral part of society. The child is reared in the family, the first social institution, then he enters the second one, the school. It takes up the responsibility in making the children understand the social life of developing citizenship, civic responsibilities, economic self-sufficiency, self-realisation and in achieving the vocational needs. These social responsibilities can easily be discharged by the school resting mostly on the support of the community.

The participation of the community is needed in all the aspects of functioning of an educational institution including planning, organisation of activities, material support basing on the resources available, regular functioning, increasing the number of beneficiaries, supervision and helping educational development.

For emphasising decentralisation of management of the school and the creation of a spirit of autonomy for educational activities the need for active participation of the community becomes a must. The National Policy on Education, 1986 gives pre-eminence to people's involvement, including association of non-governmental agencies and voluntary effort. As per National Policy on Education, 1986, the non-government and voluntary efforts including social activist groups should be encouraged, subject to proper management, and financial assistance provided.

It is always felt that there is not enough time for the teachers to contact the community. But it is felt that community support is very much essential. Sometimes for this purpose sometime is to be squeezed out of the busy schedules of the teachers. The functions organised in school should be based on the community support instead of making it official with inadequate community involvement. Let us now consider the feasibility of community support in areas where it is most needed.

Activity Sheet No.3

| Enlist some important areas/aspects of educational programmes and institutional management in which community participation is needed. | Collect Collate Discuss |

The areas in which community help is needed are related to academic, non-academic, management and administrative. The nature of the help is almost the same in both urban and rural context except in certain aspects.

1) There are many skilled persons in the community who can provide assistance in taking socially useful productive work classes. The expertise ·

available in different fields can be utilised to
take classes in the field of their specialisation
to enrich both the knowledge of the teacher and the
taught. Even the -qualified and educated person can
teach part-timely for sometime in the absence of
regular subject teachers.

2) School can take up some programmes of organising
co-curricular activities and extra-curricular
activities with the active help of community. The
programmes of organising the observance of national
days, observance of some social functions, cultural
activities, training camps, organising community
feasts, field trips, excursions, science clubs,
science exhibitions, cleaning and maintaining
public roads, controlling traffics, managing
crowd in social gathering and festivals, fire-
service programmes, first-aid training, population
education programmes, hygiene programmes etc.

3) School with the help of the community can take
up universal enrolment programme. Parents can
be persuaded, motigated and pressed socially to
enrol their children in the school, ensuing
regular attendance and retention of their wards
in the school.

4) Involvement of personnels in the school activities
from the community helps smooth and regular
functioning of schools by solving unforceseen
day-to-day problems.

5) Interaction between students and teacher can be
strengthened in a better way be parent-teacher
interaction, which will pave the way for
maintaining congenial atmosphere in the school,

6) If properly convinced and motivated the community can be brought forward in providing help man and material such as construction and maintenance of school building, furniture teaching·aids, residence for teachers, free·labour etc.

7) Community can contribute by way of giving valuable suggestion in planning and execution of activities. It can also provide authentic feedback with regard to the views of the children about teaching-learning process to bring about necessary modification. Community can further provide the guidance and counselling service as and when required and available.

8) The administrative problems of the schools are often taken care of well by the community. On occasion the parent teacher, association, panchayat samiti or some influential personalities play important role to bring back the administration to normally.

There are so many other aspects, in which the community can participate and help educational system.

Participation is a two-way traffic. Let us now examine the role of a school in maintaining bett r school community relationships which play an important role in attracting community participation.

Activity Sheet No.4

| Note down the activities that the school can undertake to maintain good relations with the community and obtain its participation. | Collect Collate Discuss |

Following are some important aspects in which a school can help the community.

1) Centre for learning - school is the specified institution where learning for the pupils takes place in a formal way and can be made a centre for informal learning too, for the members of the community. The school can provide academic assistance to the members for further learning.

2) School can be made a centre of activities based on rich experiences and expertise available with the members of the staff. Activities like popularisation of science and science exhibition, fairs and musiums etc., familiarities with population education, presenting rarely available expertise from some other institutions can be taken up in the school.

3) School is a centre where meetings and functions can be held. School provides the infrastructural facilities like building, library play ground, audio-visual materials.

4) School can utilise the resources available from the community with regard to improvisation of apparatus. Hence school can be made a centre of utilizing resources available (man and material) from the community.

5) Teachers are considered as knowledgeable persons particularly in the school locality. People consult them in many spheres specifically in the field of educational and vocational guidance.

6) Educational institutions is a place where thinking process goes on to bring about necessary modification in the society. Always the voice against social evils, tabooes and dogmas etc., has been raised

from the educational institutions. The institutions
help in collecting and disseminating new and
innovative ideas relating to education and other
developmental programme in society.

7) The result of the activities of school children
may well be displayed before the parents and other
members of the community to provide them a sense
of satisfaction about their childrens' performance
and if it pleases them, they can learn from the
activities/experiences and in the light of these
other works can be taken up in school.

Let us now try to find out the basic factors which
influence the community participation.

Activity Sheet No.5

What are the basic factors influencing community participation as per your feeling.	Collect Collate Discuss

It is obvious from the foregoing discussion that the
following are the major factors which influence the partici-
pation of the community in school programmes.

1) A sense of belongingness and sharing among the
community members play an important role. The
school and community should work as co-partners
in planning the activities and their management.
Hence the process of participatory planning and
management is more important.

2) The effective functioning of different committees
related to school and community is responsible
for better community participation. The committee

like school management committee, school coordination
committee, parent-teacher association should properly
by activated and utilized for ensuring community
participation.

3) Better utilization of existing social institutions
like youth dormitories in tribal areas and
community welfare centres in urban areas.

4) The active involvement of voluntary organisation
in the community participation should be encouraged.

5) There should be proper survey and identification
of the community resources available and be made
available. The area like socio-economic status of
the community, composition of social groups,
cultural background, reasours for wastage and
stagration of pupils in educational system, reasons
for non-attendance of students and cooperation are
to be taken care of for mobilising community
resources for school improvement.

6) Proper Mobilisation of Youth Power in Society.

Apart from the factors mentioned above there are some
important methods of community contact and working with it
to ensure community participation. Let us discuss these
methods.

Activity Sheet No.6

Where are the important methods of community contact and working with it to ensure community participation.	Collect Collate Discuss

For smooth management of community participation
please try to see some effective methods of community
contact to ensure community participation.

The following useful methods have been identified :

1) Know the community to the fullest possible extent about its social structure, economic constraints, cultural background, political set up, students background and other problems related to that particular area.

2) Identification of self of the teacher with the new community where he is going to be a member. The teacher is to come down to a level at par with the people of the-community and respect them, their tradition, culture, customs etc.

3) Better understanding of social life, civic responsibilities, economic self-sufficiency so that better execution of the programmes of educational and vocational guidance can be provided.

4) Proper pupil-teacher planning for learning through community study for which the study of learner's entry behaviour (What he knows, what does the school want him to know, how can it be found out) and the community study experience (which includes the objectives, preliminary preparation, mechanics of arrangement, observing and recording, learner's response and its evaluation) are to be taken care of.

5) Instead of complaining about the children to their parents, positive suggestions to the parents and ensuring raciporcal behaviour from them with regard to their wards will contribute a lot to achieve the broader goals of education.

6) The sharing of experiences in community work and seeking cooperation from the expertise available in the community is very much useful.

7) Attending the social functions, religious festivals and other social gathering in the locality helps the teacher to come closer to the community.

8) The management committee which includes the important personalities of the area ensures for smooth running of the school.

9) By organising some science and social studies exhibitions, fairs etc., and rendering services of youth from the school through N.C.C., scounts and guides and N.S.S. movements school can be brought closer to the community.

10) The existence of and better functioning of parent-teacher association also plays an important role to bring school and community still closer.

Those methods cited above apart some other actions play important role in community participation. Those are :

1) The communication process which includes a sense of humour, tone and tenor of formulating and transmitting the message, control of the channels through which the message is transmitted, understanding the individuals (receivers) mental and physical maturity to receive and feed-back from the receiver.

2) Establishing rapport with community by respecting each and every individuals.

3) Understanding that there is no ready made solution to any problem and the solution is dependent on the judging capacity and action of the individual or a teacher in a particular situation.

4) Acting as a guide and goad the community in different situations.

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Module No.28
TEACHING AND LEARNING OF MOTHER TONGUE AT PRIMARY LEVEL

Sri A.C.Sahu

INTRODUCTION:

The National Policy of Education (NPE) emphasises on universalisation of Primary education, which provides free and compulsory education upto the age group of 14 years and it is a directive principle of the constitution for materialisation of this primary education or mass education, we went an effective medium of instruction and obviously, this medium cannot be other than the Mother Tongue. Therefore, at primary or elementary level the effective teaching and learning of Mother Tongue is inevitable. In post-independence period Mother Tongue is associated with all walks of life and thus plays a vital key role in total curriculum. It nurtures the body spirit and mindof the child in an integrated manner and therefore, Gandhiji, the father of the nation has always advocated for the teaching of mother tongue. In post independence period, it is the medium of instruction at primary, secondary and university level and also enjoys the privilege of becoming the medium of administration. Therefore, the teaching and learning of mother tongue, which has been neglected till today, should be given due importance.

In the effective process of teaching and learning mother tongue, family and teacher have joint responsibility. But in a developing country like India, whose major population consists of scheduled caste, scheduled tribe and other backward communities, the family always, may not be in a position to discharge its duty towards desired language teaching and learning, as there are many first generation learners in primary and secondary level. Obviously the teacher's responsibility is multiplied and his role becomes more

crucial as the family of the child may talk a dialect or sociolect, which considerably deviates from that of a standard language, which normally enjoys the status of a regional language, the medium of instruction.

> a) Please find out how many dialects and sociolects are found in the Mother Tongue, with which you are concerned ?
>
> b) How these dialects and sociolects adversely affect the teaching and learning of Mother Tongue ?
>
> c) What remedial measures you adopt to eradicate the mistakes caused by the aforesaid factors ?

Collect
Collate
Discuss

The teacher of Mother Tongue without much expectation from the family, in most of the cases, has to develop innovative strategies to teach mother tongue effectively. In such difficult and crucial circumstances, how the teacher can discharge the sole responsibility single handedly in an integrated and wholistic manner ? What are the strategies and methodology of teaching Mother Tongue at primary level, which can ensure integrated and total development of the child ?

Objectives

After reading this module the teacher of Mother Tongue should be able :

- To spell out minimum level of learning objectives in Mother Tongue which, should be the guiding factor for creating teaching learning environment and in developing innovative strategy of methodology and instruction materials.

- To organise teaching and learning process in a problem solving made, by associating his experience and thinking.
- To make an integrated and wholistic approach in language teaching.
- To clearly distinguish the objectives of teaching mother tongue at primary level, from that of the secondary level.
- To innovate and suggest method of need-based data-collections and interpretation, appropriate to each stage of learning the Mother Tongue.
- To make learner-centered approach or child-centered approach so that language learning would be more effective.
- To adopt participatory approach by utilising the principle of 'learning by doing'.
- To promote oral-literacy, which is a most neglected phase in the learning of mother tongue.
- To make learner-centered approach or child-centered approach so that language learning would be more effective.
- To adopt participatory approach by utilising the principle of 'learning by doing.'
- To promote oral-literacy, which is a most neglected phase in the learning of Mother tongue.
- To encourage pupil to communicate with ease, comfort and spontneity, which are the distinguishing criteria of Mother Tongue.
- To have continuous comprehensive evaluation at every stage of learning Mother Tongue.
- To inculcate basic values like nationalism, patriotism, love, dedication and sacrifice etc. and right type of healthy attitude towards life.

- To train and encourage pupil to explore and utilise
source materials of the knowledge in Mother Tongue
such as reference books, children's Encyclopedia,
Dictionary, newspapers, magazines and journals, mass
media like radio and television should be utilised
in a need based, regulated manner for learning the
Mother Tongue.

Indian culture and heritage has been nurtured and
preserved through Mother Tongue. In India alone, there are
3,000 languages, 4,000 castes and communities, 4,000 faiths.
When looked through environmental, ecological, socio-economic
and political parameters, it appear fragmented and dissociated.
But the national, identity and cultural heritage has been and
could be nurtured by inculcating and fostering conducige
values, through effective teaching of Mother Tongue.

Basic Objectives of Teaching Mother Tongue

- Can a learner be said to know a Mother Tongue, which
he can not effectively communicate ? The foremost and
predominating objective of teaching Mother Tongue is
to develop, potentialities so that the learner can
effective communicate and interact in a style of his
own through oral and written channel.

i) Let us ask ourselves and find out what
is the percentage of students who can
effectively communicate through the
Mother Tongue with spontaneity, ease
and comfort.

ii) Is there tangible change in their oral
expression by the means of teaching
Mother Tongue ? If not, what are the
causes of failure in producing the
desired effect in teaching and learning
process of the Mother Tongue ?

Collect
Collate
Discuss

iii) It might have been observed, that most of
the adult talkers in radio and T.V. including
V.I.P.'s are unable to communicate effectively
in Mother Tongue. Why ? what may be the
reasons of this ineffective communications ?

iv) Stress, intonation and rhythm are the life
and soul of language. Are they being utilised
in most of the oral expressions of the Mother
Tongue '?'

v) Do we feel the need of imparting/training to
make the students conversant in terms of
stress, intonation and rhythm ?

Which features are crucial to the learning process of
the Mother Tongue ? Obviously, one of the reason is faulty
model - the model built up by the teacher and speakers of
the concerned associate community around the learners of the
Mother Tongue. Let us find out, if there are any similar
barriers and hurdles, which adversely affect the language
learning situation and distorts the standard form of the
Mother Tongue.

a) Do you agree with the factors mentioned
   above with reference to distorting the
   Mother Tongue in the process of
   acquisition ?

b) According to you, what are the other
   factors responsible for such faulty
   acquisition of Mother Tongue ?

Collect
Collate
Discuss

Imprrting fundamental skills - four fundamental skills
of learning the Mother Tongue, like any other language should
be fostered effectively. These skills we know :

a) Listening with understanding
b) Speaking
c) Reading
d) Writing.

In otherwards, these skills can be classified as :

a) Comprehension of the spoken language (listening with understanding)
b) Production of the spoken language (speaking)
c) Comprehension of the written language (reading)
d) Production of the written language (writing)

These four skills are also common with reference to teaching any other language. In that case, how the objective of teaching and learning of mother tongue, distinguishes it from rest of the languages ? Inducing creativity and original thinking are the distinguishing features of the Mother Tongue.

- In the classroom teaching of Mother Tongue, at lower primary level, talk the Mother Tongue, instead of talking about the principle and formulae about it. The grammar of functional communication is much more important, than that of the formal grammar.

The Teaching-Learning Strategy at Primary Level

The Mother Tongue is usually the first language (L_1) for most of the learners at Primary level. All the leading educationists and Education Commissions have prescribed, Mother Tongue should be necessarily the medium of instruction.

At the lower Primary level it has been emphasised, no other language other than Mother Tongue should be taught. It facilitates the teaching of Mother Tongue. At this stage Mother Tongue has been marked as a core-activity in the · curriculum and proportionately there is also provision of allotment of more time in the concerned time-table. Therefore,

the concerned teacher should optimise the opportunity to
foster right type of language. Skill and competencies with
reference to Mother Tongue keeping in view the minimum level
of learning.

Different Phases of Learning the Mother Tongue

It's bottle necks and remedial measures

At pre-school stage, the child before entering to school,
automatically acquires the functional skills and competancies
of the Mother-tongue, with reference to listening and speaking
abilities. After entering into schools these two skills are
to be sharpened and strengthened to facilitate and promote
oral expression and also to further support the learning
problem of reading and writing, the next phase skills of the
language-learning.

In case the-child's acquisition due to substandard
surrounding is faulty and learning of Mother Tongue is
distorted, the teacher with utmost care and precaution, would
gradually rectify the faults through phase-wise repeated
drill work. It should not be done at the cost of the child's
enthusiasm and interest of learning the language.

Narrow view about Language Instructions in Mother Tongue

Somehow or other most of the schools take the narrow
view that, language-instruction is confined to the teaching
of reading and writing, totally neglecting the oral literacy,
oral activity and above all creativity and originality which
help in developing an integrated personality.

a) What is your view point of teaching Mother Tongue in a wholestic manner ? b) Do you adopt any methodology out side the framework of the curriculum in Mother Tongue, in order to promote oral-literacy and other oral activities ?	Collect Collate Discuss

c) What are the group activities, that you can
suggest to broaden the scope of teaching
and learning of Mother Tongue ?

The reason of taking such a narrow view about teaching
a language can be attributes to the teacher, who confines the
curriculum as the absolute objective of teaching the Mother
Tongue. The broad based language teaching instructions in
Mother Tongue, transcends the four walls of curriculum to
all walks of life and environment of the child.

Aids and Materials of Language Teaching in Mother Tongue

Aids of language teaching, particularly in Mother
Tongue are abundantly available in open nature and surrounding
environment. Besides that, many 'low cost' and 'no cost' aids
can be produced by the concerned teacher, if he/she is a bit
innovative and imaginative by nature.'Thinking aid's are
most useful for the child, who is fanciful by nature, than
that of traditional audiovisual aids/materials of teaching
the language.

Besides the above teaching strategy, language materials
in teaching Mother Tongue consists of :

i) Reading-readiness materials/Break through readers
such as 'read and learn', 'Look and Say' series books.

ii) Games and toys.

iii) Conversation/picture chart.

iv) Library consisting of children's books,
encyclopedia and children's dictionaries.

How to use Language-Learning Materials

The best learning-situation can be created by associ-
ating the life experience of the learner with reference to
the aids/materials. Playful language-activities in Mother
Tongue can be organised by utilising the learning materials.

Different co-curricular language-activities can be
organised in order to enlarge and broaden the programme for
Mother Tongue, so that optimum, total learning outcome can
be achieved.

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Module No. 29

EXTENSION PROGRAMME

Dr. S.K. Goel

Since independence there has been a large scale expansion and a degree of reconstruction in the field of education at all levels. In the field of teacher education also there has been not only quantitative expansion but there has also been some qualitative changes with the incoming of the influences of various new trends and other new features. Not only have the training institutions and the enrolment therein increased over the years but changes have come in the outlook for the preparation of teachers.

Educational reconstruction in India implies the use of integrated professional experience of specialists in research, planning, development and administration.

As text books and supplementary educational materials are tried out with practising teachers in workshops in which the teacher is evidently the instrument of change, so the entire structure of training and extension in field services is designed to bring about that volume of change that is implied in a continuous process of evaluation, discovery and feedback. All change, all innovation must reach out to take in the teacher, to make him the hub of the continuing revolution in education.

The NCERT seeks to train the specialists in curriculum development, evaluation and measurement, audio-visual education, guidance and counselling, research methodology, educational administration and other areas of educational enterprise through extension services programme.

Research and training apart, one of the main functions of NCERT has been to develop on subcontinental scale programmes in educational extension. This is done through the Department

of Field Services. The Department has evolved a new training
programme through internship extension; workers have been
given special training in the development of instructional
materials and the improvement of the functional use of school
libraries.

One of the important activities that the Council has
undertaken is to extend educational information to educa-
tional workers. This is the underlying aim of the extension
and field services organized by the Council in primary,
secondary and higher education as well as for workers in
teacher education and in educational research. The Directorate
for Secondary Education set up by the Council comprising a
large number of extension service centres (97) in different
parts of the country seeks specially to cater for this
activity of the Council. These centres are organizing on a
continuing basis extension and in-service educational
activities for the benefit of Secondary Schools in India.
A large number of developmental programmes aimed at improving
secondary education have also been conducted. Hundreds of
schools are involved in the programme of intensive school
improvement. Each school has developed a programme of
improvement in specific areas depending on its need and the
needs of its teachers.

In addition, various other Departments of the Council
are engaged in the field of services. Short-term training
courses, conferences, workshops, seminars and follow-up
studies, clubs, fairs, exhibitions and film shows are the
means through which the latest developments in education are
made available to personnel in educational vocations.

Some conferences of State Education Secretaries and
Directors of Public Instruction have been held to discuss
the ways and means of strengthening the Extension Services.

It was recommended that the programmes of Extension Services should give priority to the state and national targets in secondary education. The staff of Extension Services should pay more frequent visits to schools, especially in the backward and rural areas. During these visits the Officers of the State Department of Education may accompany the Extension Services staff whenever possible. Extension Services should assist the State Department of Education in implementing the various schemes in secondary education, particularly those which are directly related to the improvement of schools. In important schemes, such as comulative record cards, organizing content courses, etc., the Extension Services Centres within a State should work together so as to divide the load and avoid duplication of efforts. The centres in a state should combine their resources in respect of publications so that worth-while publications may be brought out in adequate manner.

Since there is a shortage of standard books on education in Hindi and other regional languages, the training colleges should take up immediately the work of translation. The State Department of Education should provide necessary help for this purpose. There is a need to introduce inservice programmes in Training Colleges where Extension Departments have not been provided. Extension Services Units should be started in those training colleges which donot have an Extension Services Centre. In order to meet the expenditure for the Extension Services Unit, a grant should be placed at the disposal of each training college. Provision should be made for the training of guidance and counselling personnel in secondary schools. Efforts should also be made to provide career masters in as many higher secondary schools as possible. In collaboration with the Extension Services Centres, the Bureau of Educational and Vocational Guidance should

organize training courses for career masters. There is a need
to formulate an integrated programme of action during the
current five-year plan so that the resources, funds and
manpower available with the Extension Centres as well as the
State Department of Education may be mobilized to achieve
the targets. It is felt that seminars should not always be
held at the headquarter but should be distributed in the
rural areas so that more teachers could participate in them.
Seminars should be of a reasonable duration so that their
impact may be tangible. The District Inspectors of Schools
should be informed of all the activities of the Extension
Centres and they should be invited to participate in the
programmes as much as possible. It is observed that individual
centres have been working on comulative record cards, each
in its own way. In view of the importance of these records in
giving guidance to the pupil, it is necessary to evolve a
uniform pattern of the card. The extension centres in colla-
boration with the Directorate should therefore immediately
take up a study of the question, analyse the existing cards
and evolve a suitable pattern of cards, accompanied by a
manual of instructions to teachers. The card should be so
framed that it gives all the essential information necessary
but at the same time it is not too difficult or cumbersome.
It is essential that the teachers should themselves fill up
these cards as they be in close contact with the pupils.
A separate section in the card could be allotted for entries
relating to the pupils' scholastic achievement as this data
is required for the university admissions.

Extension Centres should visit the schools more
frequently, attention should be given in greater measure to
backward and rural areas. Extension Centres should assist the
State Department in the proper utilization of science grants
to schools. During their visits the Extension staff should
verify whether the schools were satisfactorily utilizing the

grants given by the State Department for improvement of
Science and also bring to the notice of the Department the
names of other schools which required such assistance. The
improvement of examinations should be taken at two levels -
one at the university level and the other at the school
level, starting from the earliest stages. This was necessary
to prepare the children adequately for the new form of testing.
In drawing up the future programmes of the centres, emphasis
should be given to subjects such as social studies, general
science and home science. The Education Department should
provide the necessary resource personnel to the Extension
Centres for these programmes. It is necessary to provide
incentives to teachers to stimulate greater iterest in
inservice activities. Provision should therefore be made for
special increments and also for the confidential reports to
indicate the degree of participation of teachers in such
inservice programmes. The State Education Department should
issue circulars to schools and managements so as to ensure
the fullest participation. Copies of departmental circulars
relating to secondary schools should be sent to all the
Extension Centres so as to keep them informed of the instruct-
ions issued by the Department from time to time. The Director
of Public Instruction may also issue instructions at the
Inspectorate stressing the fact that Extension Centres were
a part of the State Department and that they should extend
the fullest cooperation to the Centres in their activities.
All the training colleges in the state should be involved in
inservice programme, each college taking up some part of the
work in the area in its neighbourhood. This would be made
possible if an allowance is given to a staff member of every
training college who was interested in taking up the work.
The success of inservice programmes of extension centres is
so closely dependent upon the efficiency of pre-service
training that it is essential to re-think about the entire

programme of teacher education. It would therefore be desirable
to convene a conference of all the Principals and senior
faculty members of training colleges in every state. The
activities of the Extension Centres should also take into
consideration the emphasis on secondary education programmes
from the national point of view such as :

    a) teaching of languages as tool subjects;

    b) science education;

    c) school libraries and development of reading habits;

    d) cumulative record cards;

    e) preparation of handbooks for the teachers.

The collection of text books available at the Central
Bureau of Textbook Research should be made available to the
State Education Department for being exhibited at the various
Extension Centres for the use of teachers. It is necessary
to make, a continuous and comprehensive evaluation of every
technique so as to assess which of them was more or less
effective. The quarterly newsletters of the Extension Centres
should be compiled and edited by highly experienced staff so
as to make them interesting, informative and useful to the
teachers.

It would be worthwile to examine the extent to which
schools were associated with the Extension activities and
to find out the impact on the schools. This would serve as
a guide for determining the types of services that should be
rendered to the strong and weak schools. Coordation is
essential for the success of extension services. This coordi-
nation should be effected between the Extension Centres and
the Training Colleges, among the Extension Centres and
between the Centres and the State Department of Education.
Coordination in the publications brought out by various
Extension Services Centres would be very fruitful. Steps
should be taken to evaluate publications of all the Extension
Centres periodically and to select those which deserve wider

distribution. The subject consultants attached to the State Department of Education should work in close cooperation with the Extension Services and provide the resource persons. It is to be emphasized that the programmes of Extension Services should be reflect the local needs of the State Department of Education and the national targets and the programmes in the field of secondary education.

The NPE places complete trust in the teaching community. It envisages freedom for the teacher to innovate and to carry on his work in a manner that is relevant to the needs and capabilities of learners, and also reflects the concerns and aspirations of the community.

The NPE has suggested a variety of steps to improve the status of teachers with effective teacher accountability and the following are the suggested steps.

1) Introduction of reforms in the system of selecting teachers.
2) Involvement of teachers in the planning and management of education.
3) Creation of opportunities and an a atmosphere to promote autonomy and innovation among teachers.

Regarding the professional education of teachers, both the pre-service and inservice components will be overhauled to meet the thrust envisaged in the policy. District Institutes of Education and Training (DIET) are to be organized for pre-service and inservice education of elementary school teachers and for personnel working in nonformal and adult education. DIETs will in due course replace substandard institutions. Colleges of Teacher Education will be strengthened so that they are in a position to provide secondary teacher education of quality. The National Council of Teacher Education (NCTE) will be responsible for accrediting teacher education institutions and will provide guidance on curricula and methods.

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.b/s

A Tool of Evaluation of Induction Level Training
of DIET Faculty

Prof. K.C. Panda
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Instructions:

1. The purpose of this Information check-list is to obtain opinion of the participants of Induction Level Training of DIET faculty (IFIC Branch) held at Regional College of Education, Bhubaneswar from 11.2.91 to 25.2.91 in connection with evaluation of programme transaction.

2. Kindly feel free to reply/question/supply informations _ , your responses will be kept strictly confidential.

3. Additional information./comments/remarks concerning improvement of the programme may be given at the end of this information check-list.

4. Please put (|/) mark against only one appropriate response. However, in case of some items tick (|/) mark is to be put against a number of responses you feel appropriate.

Section A: Personal Data

1. Name of the participant:-

2. Age (in years) :-

3. Sex : Male/Female

   (Please put a (|/) mark)

4. Full postal address of the
   DIET to which you belong:-

5. Teaching Experience in
   completed years:-

6. Educational Qualifications:-

Section B: Programme Transaction

1.   The organisation of Training:
   a) had logical sequence and easy to understand & follow.
   b) was partly easy and partly confusing.
   c) was difficult to understand and follow.

2. The Resource Persons:
   a) Encouraged open discussion
   b) Answered questions only
   c) Focussed on coverage of the module.
   d) Created proper motivation in the subject matter.
   e) All the above.

3. The presentation of the modules by the resource persons was:
   A) Clear, definite and useful
   B) Sometime clear and sometimes confusing
   C) Frequently vague
   D) Mechanical and monotonous
   E) Inadequate from the point of view of duration of the programme

4. The quality of modules developed by R.C.E.,Bhubaneswar faculty was:
   a) Excellent
   b) Good
   c) Average
   d) Poor

5. The name of the modules which was easy to comprehend (Please indicate only module No.(s).

6. The name of the modules which was difficult to comprehend (Please indicate only the module No.(s).

7. The resource persons were able to communicate the message presented in concerned modules (Please tick (against appropriate response.
   A. Very effectively
   B. Effectively
   C. Not effectively.

8. The modules would help the DIET faculty (IFIC Branch) to design the courses for various target groups as outlined in DIET document.

    A. To a considerable extent

    B. To some extent

    C. Marginally

9. The modules developed by the faculty of RCE,Bhubaneswar covered various functions of IFIC Branch as outlined in DIET document.

    A. Adequate

    B. Moderately adequate

    C. Inadequate

10. Usefulness of the modules for preparing/conducing programmes of IFIC Branch at DIET level.

    i) very useful

    ii) useful to some extent

    iii) not so useful

11. Course Transaction methodology (Please put (|/) mark if more than one applicable.

    A. Lecture/talk

    B. Lecture cum discussion

    C. Lecture cum discussion cum demonstration.

    D. Lecture cum activities

    E. Participatory group discussion

    F. Investigation approach

    G. Self-study

    H. Practicals

    I. Sharing of experience

    J. Identification of practical problems faced in the fields Transaction of in-service message through audio-visual modes.

    K. All the above.

12. The duration of Training was:

    a) Adequate

    b) Moderately adequate

    c) Inadequate.

13. Level of interaction between resource faculty and participants were:

    a) High

    b) Average

    c) Poor

14. Level of competence of the resource persons as rated by you :

    a) High

    b) Average

    c) Poor

15. Level of involvement of the resource persons as observed by you :

    a) High

    b) Average

    c) Poor

16. Level of involvement of participants in the programme as observed by you :

    a) High

    b) Average

    c) Poor

Section C : Programme Input

17. Quality of materials/modules developed by RCE,Bhubaneswar for the Induction Level Training.

    A. Excellent

    B. Good

    C. Average

    D. Poor

18. Availability of media in training (Please put tick(|/ mark if more than one are applicable).

    A. Teaching aids

    B. Black Board

    C. Audio Aids

    D. Visual aids

    E. Audio-Visual Aids.

19. Availability of space for seating arrangement was :

    A. Adequate

    B. Moderately adequate

    C. Inadequate.

20. Availability of space for group work was :

    a) Adequate

    b) Moderately adequate

    c) Inadequate

21. Availability of modules/materials prepared by RCE, Bhubaneswar to each DIET/SCERT.

    a) Adequate

    b) Moderately adequate

    c) Inadequate.

22. Distribution of module/materials was :

    a) Timely   b) Delayed

23. Adequacy of the modules/materials for personnel of IFIC Branch of DIET.

    a) adequate
    b) adequate to a considerable extent
    c) adequate to some extent
    d) marginally adequate.

24. The comprehensibility of the modules/materials prepared by REE faculty for IFIC Branch of DIET.

    a) Comprehensive
    b) Comprehensive to a considerable extent
    c) Comprehensive to some extent
    d) Marginally comprehensive

Section D: Visualisation of roles of the DIET faculty (IFIC Branch) after training (Please put a (/) mark in the items you feel the most appropriate response).

25. IFIC Branch of DIET is to organise.

    1. Short term programme
    2. Medium term programme
    3. Long term programme
    4. All the above

26. IFIC Branch of DIET is to organise training programme for

    1. Primary school teachers
    2. Upper Primary school teachers
    3. Headmasters
    4. Head of school complex

5. Block Education Officers/Circle Inspectors/ S.I. of schools.

6. AE/Non-formal education personnel

7. Resource persons

8. Community leaders/members of VEC/Voluntary organisation/Youths

9. All the above

27. IFIC Branch of DIET is to organise :

1. Main Programmes

2. Theme specific programmes

3. Both main and theme specific programmes

28. The functions of IFIC Branch of DIET are to organise:

a) Inservice educational programmes.

b) Extension programmes (field interaction).

c) Should encourage action research and dissiminate results of innovation.

d) Should monitor progress towards realisation of goals of UEE.

e) All the above.

29. The course Transactional methodology should be :

a) Minimum lecture

b) Lecture-cum-discussion

c) Lecture-cum-discussion-cum-demonstration.

d) Participatory group work

e) Case studies

f) Investigation approach

g) Practicals

h) Sharing of experience

i) Identification of practical problems faced in the field ,

j) All the above.

30. Total approximate number of programmes a DIET
is supposed to organise in a year :

    .i) 10

    ii) 12

    iii) 14

    iv) 18

31. Minimum requirements for IFIC Branch of DIET
involves formulating of :

    i) Annual Calender

    ii) 5 year perspective plan

    iii) Information proforma's for Data base
         in regard to various target groups.

    iv) All the above.

32. Is the experience in developing Annual calender and
five year perspective plan useful and meaningful
to you ?

    i) to a considerable extent

    ii) to some extent

    iii) marginally

33. Do you find the ideas for building up a comprehensive
data base on all aspects of UEE helpful and practicable:

    i) to a considerable extent

    ii) to some extent

    iii) marginally

34. Please indicate the strong and weak points
of the programme.

Strong Points   (in order of importance)

    1

    2

    3

    4

    5

Weak Points   (in order of importance.)

    1

    2

    3

    4

    5

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CLEARING HOUSE FUNCTIONS OF IFIC ON RESEARCH
AND INNOVATION IN ELEMENTARY EDUCATION

Prof. K.C. Panda

The terminology IFIC has three basic components which are closely related to the clearing house functions viz.

I. Inservice teacher education

F. Field interaction

IC. Innovation co-ordination

Besides these essential functions, the triparitte division of the role of IFIC in particular and DIET in general can be looked at from three angles.

Training

Resource Development

Action Research

Now the question would arise what should be the clearing house function ? Objectively speaking, the clearing house function should promote and undertake activities which would achieve the objectives of DIET i.e.,

UEE

UAE/NFE

with built in structure for achieving minimum learning levels and ensuring the qualitative change in Elementary Education.

Resource Development:

In DIET, information have to be collected, collated and analysed from various angles e.g.,

a) Research: The IFIC can conduct research, and collect research findings of others relating to Elementary Education. The research reports can be abstracted in an uniform manner. Metaanalysis can be done and the findings can be kept in storage.

b) <u>Training</u>: The training needs may be identified and a kind of data base be generated to draw teachers for various inservice and preservice training. Training curricula may also undergo changes through evaluation.

c) <u>Innovations</u>: Case Study of institutions, success stories, individuals who have outlived in the villages, noval approaches to reduce stagnation and increase motivation of pupils and build a good climate are some of the innovative measures on which information can be gathered.

d) <u>Action Research</u>: Action Research is a time bound micro-level situation specific study usually arising out of immediate need which can be undertaken and the findings can be discussed. For example, the discipline system in the school, how to increase motivation of pupils, How to raise aspiration etc.

<u>Dissemination</u>

Dissemination has a large implication. Dissemination can be done under certain ways. These include (a) prior to dissemination and (b) dissemination proper.

<u>Prior to Dissemination</u>

a) <u>Coverage, Development and Management</u>

This will cover inhouse action research, research on elementary education, data base on teaching personnel, schools, pupils, learning outcomes, educational survey information, Progress and Trend reports etc.

b) <u>Programming System</u>: As the materials will increase in
years, Indexing and Abstracting are important.
Abstracts may be kept in a common format
normally used and indexing by author and
subjects as well as titles, so that it can
be retrieved.

c) <u>Data base Development</u>: Time and Resource Management are
also important in developing a data base. It
will be difficult within the IFIC infrastructure
to be very optimistic but within the limits of
various functions data base are necessary for
programme planning.

d) <u>User Service</u>: There should be a provision for utilisation
of information stored by teachers, administra-
tors, members of other DIET/State/National level
organisations. Hence, the lending system are to
be activised and operationalised within the
manpower at hand. Getting Feedback from users
would be a concrete step for improving the
system and some of the important publications
be priced on no profit-no loss basis.

<u>Dissemination</u>

The following channels be used for dissemination of
the research and innovative practices operative within the
DIET.

a) Publication of News letter for use by Elementary
Teachers within the DIET - one for each school.

b) Publication of Journal or magazine emboding the findings of research and innovation for use in schools.

c) Broadcast through AIR/TV and other channels i.e., pamphlets, awareness meetings, seminars where the ideas and findings can be floated.

d) Listing of papers available in this Newsletter for the knowledge of readers and procedure of availing these.

These are some of the suggestive steps for IFIC and its clearing House function.

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